



TRINET NEWSLETTER

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Footprints in the Sands of Time

Understanding the past

For most of us, when we think about sand, it is just something that is light coloured, grainy, found on the sea shore or river banks and so on. But there is evidently a lot more to sand than meets the eye.

Apart from the NGO and CSO community that have been involved in the rehab process after the December 2004 tsunami, another community very active in this scene are the academics, among who are geologists and those who have specialized in micropaleontology. Collecting, classifying and analyzing sediment samples from along the tsunami affected coast, comparing with deposits made by earlier events to get an idea of the frequency of occurrence of such tsunamis as well as improving our understanding of how and from where the tsunami-forces can move sand and mud to deposit on land has revealed some interesting information. For example, after the December 2004 tsunami, in India, evidence of three tsunami waves is preserved in the form of characteristic sediment accumulation – the number of waves is the same as reported by the local populace. In Kenya, on the other hand, only one wave was recorded while in the Kajuh district of Banda Aceh, Indonesia, there were seven as indicated by the sediment signature and corroborated by local observations.



The tsunami sand deposits often contained two or more layers. These layers were formed by the three tsunami waves and due to their intensity

Photo courtesy Dr S. Srinivasulu, Anna University, Chennai, India

Tsunamis are caused by the disturbances of the volume of water above the seabed with a series of waves (a wave train) forming and spreading from the source area. Waves generated by storms break and dissipate their energy in surf zones though the energy that does reach a beach is still great enough to erode the coast. Tsunami waves, on the other hand, do not break but surge up the beach resulting in the waves reaching the coast without their energy getting dissipated. This is why tsunami are more destructive than storm waves on land and also why the sediment signatures left behind by the tsunami give an idea how much landward the wave has penetrated.

A large number of papers have been published in various journals on the quality of sediments deposited by the tsunami – recognizable clearly from deposits that are dumped ashore by winds and storms. Some of those based on research in India were presented at a conference that coincided with the World Environment Day in 2006 at Anna University. More recently, a session was devoted to “Micro- and meioorganisms signatures in tsunami deposits” at the Fifth International Conference on Environmental Micropalaeontology, Microbiology and Meibenthology, EMMM’2008 held at the University of Madras, India from February 17 to 25, 2008.

Micropaleontology is that branch of paleontology which studies microfossils, generally not larger than four millimeters, and commonly smaller than one millimeter, the study of which requires the use of light or electron microscopy.

The sediments were found deposited in beaches, mudflats, agricultural fields, backwaters, and river mouths, with the

thickness of sediments gradually decreasing landward. Tsunami sediments were recognized by their colour and grain gradation into clay lenses towards land. Under suitable magnification, the deposits were found characterized by marine shells as well as dried up salt on the surface layers. These marine shells included those of microscopic animals including foraminifera and ostracoda which are very specific in their lifestyles and habitat and hence their presence in a sediment sample can help indicating the



Q. ammonoides



A. trispinosa

source of the sediment. For example, in Nagapattinam, it was found that the faunal association in the study area was dominated by *Quinqueloculina seminula* and *Nonion scaphum* indicative of mid to low tidal and inner shelf environments. In other words, the tsunami sediments deposited in the Nagapattinam coast have been brought from inner shelf environment (Nagendra et al. in Current Science: <http://www.iisc.ernet.in/currsci/dec102005/1947.pdf>)

Some foram shells from the sediments deposited by the tsunami. Pictures courtesy, Dr. N. Rajeshwara Rao, University of Madras,

Foraminifera: An ancient group of single celled animals with no tissues or organs but possessing a shell. Their name is derived from the foramen, the connecting hole through the wall (septa) between each chamber. They have a geologic range from the Cambrian to the present day. They may be benthic (bottom living) or planktonic (floating). When foraminiferans die, their 'tests' sink to the seafloor and contribute to the 'ooze'. The shape, size as well as the striations on the test help in identification of the species. Carbonate oozes as those dominated by foram shells are the most widespread shell deposits whose studies have been, in the past, spurred by petrodollars. Their fossils provide the single most important record of Earth history over the past 200 million years.

Interpreting the future

Tsunamis are relatively rare events. Today's hot topics are Climate Change and Environmental Pollution. That the earth's climate has been changing continuously is accepted; what is under debate is the speed at which this change is happening today. The think-tanks of the world are at work trying to understand the signs from the past to see if they can, to some extent at least, predict the future. For micropaleontologists and sedimentologists, today the aim is to see if foraminiferans and such others can serve as **environmental tracers**.

Forams dwell in a variety of habitats, though they are mostly marine. Their distribution patterns as well as their diversity and composition of their assemblages is controlled by ecological parameters such as temperature, salinity, oxygen levels etc. In stressed environments, the number of asexually reproducing units has been found to be high – indicating the fact that the internal metabolism is preferentially channeling energy into combating stress rather than diversify its

genepool. The quality of preservation of the shells is also an important indicator of the environmental quality.

Today, it is not just paleontology of these microscopic creatures that is being looked at. Original techniques like contact fluorescence microscopy, fluorimetry and molecular methodologies are being used to investigate cellular response to environmental change in living foraminiferans. Comparing assemblages of foraminiferans from fossil records with living assemblages from the present, and analyzing them with respect to temperature, salinity and other physico-chemical regimes is also being focused on.

Undeniably, the road ahead is difficult and intense work needs to be done, including laboratory work to understand the differences between effects of anthropogenic stress and normal changes before clear indices can be developed that can be used extensively. But this monitoring at microscopic level is believed to be of importance in serving as an early warning system providing an alert to changes without waiting for visible (macroscopic) changes to happen, by which time, it may be too late to work on the causes that are causing the changes. At the end, it is with apologies to Longfellow:

“Little creatures mostly marine
 Cased in microscopic shells of lime,
 A. trispinosa, Q.seminula, S.depressa,
 So the roll call goes for the creatures in brine.
 Who associates with whom?
 Is the carapace patterned or plain?
 Look carefully and read the stories they tell:
 They are footprints in the sands of time”.

Useful Reads

In Dead Water – Merging of climate change with pollution, over-harvest, and infestations in the world's fishing grounds. Nellemann, C., Hain, S., and Alder, J. (Eds). February 2008. United Nations Environment Programme, GRID-Arendal, Norway, www.grida.no
http://www.unep.org/pdf/InDeadWater_LR.pdf



The World's oceans play a crucial role for life on the planet. Healthy seas and the services they provide are key to the future development of mankind. Our seas are highly dynamic, structured and

complex systems. The seafloor consists of vast shelves and plains with huge mountains, canyons and trenches which dwarf similar structures on land. Ocean currents transport water masses many times larger than all rivers on Earth combined. In this report, the locations of the most productive fishing grounds in the World – from shallow, coastal waters to the deep and high seas – are compared to projected scenarios of climate change, ocean acidification, coral bleaching, intensity of fisheries, land-based pollution, increase of invasive species infestations and growth in coastal development.

Some major conclusions:

- Half the World catch is caught in less than 10% of the ocean
- With climate change, more than 80% of the World's coral reefs may die within decades
- Ocean acidification will also severely damage cold-water coral reefs and affect negatively other shell-forming organisms
- Coastal development is increasing rapidly and is projected to impact 91% of all inhabited coasts by 2050 and will contribute to more than 80% of all marine pollution
- Climate change may slow down ocean thermohaline circulation and continental shelf "flushing and cleaning" mechanisms crucial to coastal water quality and nutrient cycling and deep-water production in more than 75% of the World's fishing grounds
- Increased development, coastal pollution and climate change impacts on ocean currents will accelerate the spreading of marine dead zones, many around or in primary fishing grounds
- Over-harvesting and bottom trawling are degrading fish habitats and threatening the entire productivity of ocean biodiversity hotspot
- Primary fishing grounds are likely to become increasingly infested by invasive species, many introduced from ship ballast water.
- The worst concentration of cumulative impacts of climate change with existing pressures of over-harvest, bottom trawling, invasive species, coastal development and pollution appear to be concentrated in 10–15% of the oceans concurrent with today's most important fishing grounds
- A lack of good marine data, poor funding for ocean observations and an 'out of sight – out of mind' mentality may have led to greater environmental degradation in the sea than would have been allowed on land.
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SAFETY AT SEA SOUTH ASIA: An online platform has been set up to initiate and encourage discussions on all matters related to safety at sea for small scale fishermen; to report, analyse and discuss accidents related to fisheries in South Asia; to highlight innovations and new technology in fisheries related to safety of life and livelihood:

<http://groups.google.co.in/group/seasafetysouthasia/sub?s=uleDrggAAAAQPVe2MbJn6Lu1Vdxin0sV&hl=en>

Also visit the website: www.SeaSafetySouthAsia.org

Housing and Infrastructure

Houses for tsunami victims handed over Nagapattinam: The Chennai-based Development Promotion Group (DPG), a non-governmental organisation, on Thursday evening handed over 111 permanent houses to the tsunami victims at Vellapallam village in Nagapattinam district. R. Bhakther Solomon, Chief Executive Officer of the DPG, handed over the keys of the houses to K.S. Kandasamy, District Revenue Officer (Relief and Rehabilitation), Nagapattinam at a function in Vellapallam. Mr. Kandasamy in turn handed over the houses to the beneficiaries. The houses were built at a cost of Rs.3.25 crore with support from Diatonic Emergency Aid (DEA), Germany and Evangelischer Entwicklungsdienst (EED), Germany, he said.

<http://www.hindu.com/2008/02/25/stories/2008022552790300.htm>

2,400 houses to be built: Pudukottai: A total of 2,400 houses will be constructed to benefit the Tsunami-hit fishermen in the coastal parts of Pudukottai district, the Collector D. Uthirakkumaran, said. Speaking at a function to mark the distribution of sports kits as additional relief to the tsunami-hit people, at Manamelkudi village, about 75 km from here on Tuesday, he said that the house, with a plinth area of 320 sq.foot each, would be constructed in a radius 500metres from the shore. Pile foundation technology would be utilised.

<http://www.hindu.com/2008/02/06/stories/2008020656750600.htm>

Court orders status quo on demolition of 44 houses: New Delhi: The Supreme Court on Friday ordered status quo on the Madras High Court order to demolish 44 houses constructed for tsunami victims at Uzhavar Nagar in north Poigainallur in Nagapattinam. A three-Judge Bench of Chief Justice K.G. Balakrishnan, Justice R.V. Raveendran and Justice Markandey Katju ordered status quo till March 3 when counsel Anand Padmanabhan mentioned about the filing of special leave petitions by Salvation Agency, the builder, and one of the occupants. In their

SLPs, the petitioners submitted that acting on a petition from A. Subbian that the houses were of sub-standard construction, the High Court, in its judgment on January 10, ordered the demolition. No opportunity was given to them before the direction was issued. They pointed out that authorities had inspected the houses and issued occupancy certificates much before the filing of the petition in the High Court. The builder said as a nongovernmental agency it had constructed the houses in good faith. Construction defects, if any, would be rectified. They termed the Collector's report recommending demolition one-sided. Irreparable damage would be caused if the High Court direction were carried out, they said, and sought quashing of the impugned judgment and interim stay of its operation.

<http://www.hindu.com/2008/02/23/stories/2008022360081200.htm>

Gift to tsunami-hit: Cuddalore: The Insurance Corporation Employees' Union has constructed a community centre at the cost of Rs. 20 lakh at the tsunami-affected Killai near Chidambaram. It will be inaugurated on February 28, according to S. Raman, general secretary, and M. Shanmugham, vice-president of the union.

<http://www.hindu.com/2008/02/25/stories/2008022552120300.htm>

Asian Development Bank team takes stock of tsunami rehabilitation works: Nagapattinam: A two-member team, Anil Das, livelihood specialist and Deepak Singh, engineering specialist from the Asian Development Bank (ADB) on Thursday inspected the tsunami rehabilitation development works being carried out in various parts of Nagapattinam district. C.V. Sankar, Officer on Special Duty (Tsunami Relief and Rehabilitation) of Tamil Nadu Government, Tenkasi S. Jawahar, Nagapattinam Collector, and other officials accompanied the team during its inspection. The ADB team inspected the rehabilitation works being carried out at the Nagapattinam port at a cost of Rs.45 crore with ADB assistance. The development works included

strengthening of north and south breakwater and several infrastructure facilities for the tsunami-affected port. In the morning, the team inspected road development works at Tarangampadi and Kuttiyandiur villages and also saw the construction of permanent houses for the tsunami-affected families at Keechankuppam. The team members expressed happiness over the progress of the development works.

<http://www.hindu.com/2008/02/09/stories/2008020956400600.htm>

Port work in full swing: Nagapattinam: The development works in tsunami-hit Nagapattinam port is in full swing and will be completed in a few months as per schedule, said C. Muthukumaraswamy, Chief Executive Officer of Tamil Nadu Maritime Board, here on Thursday. Mr Muthukumaraswamy, who inspected the Rs.44.50 crore development works of the port being carried out with Asian Development Bank assistance, said that all the works including the strengthening and extension of the north and south breakwater would be completed in time. He said that a dredger would be purchased for the port at a cost of Rs.7 crore.

<http://www.hindu.com/2008/02/22/stories/2008022260310600.htm>

Foundation laid for first private fishing harbour: Nagercoil: The State Government has expedited the process for setting up fishing harbours in Kanyakumari district and funds to the tune of Rs 150 crore have been allotted for various such projects and enhancement of livelihood measures in the post-tsunami period, said State Minister for Fisheries K P P Samy here on Tuesday. Laying the foundation stone for the Rs 50-crore fishing harbour project at Muttom, he said the country's first ever fishing harbour project

under a private venture capital would be implemented in 15 months. The modern fishing harbour would have docking facility for 600 mechanised boats, the Minister said, adding that restaurants and cold storage facility would be provided.

<http://www.newindpress.com/NewsItems.asp?ID=IET20080205160114&Page=T&Title=Southern+News+-+Tamil+Nadu&Topic=0>

Sanitation schemes for habitations of tsunami affected to be over by next year: Tiruchi: All the 16 packages of sanitation schemes sanctioned for 73 permanent habitations of the tsunami-affected people in Tamil Nadu will be completed by March 2009, according to N. Rajakumar, Joint Chief Engineer, Tsunami Cell, Tamil Nadu Water Supply and Drainage (TWAD) Board. The schemes, to be executed at a cost of Rs.29.37 crore with World Bank assistance, will be implemented in 17 permanent tsunami habitations in five municipalities and 56 permanent habitations in 18 town panchayats in Nagapattinam, Kanyakumari, Cuddalore, Villupuram, Tuticorin and Kancheepuram districts. About 56,870 tsunami affected people would benefit from the schemes taken up under the Emergency Tsunami Reconstruction Project, Mr. Rajakumar told reporters here on Wednesday. The sanitation systems would be set up with three different technologies: fluidised bed biological reactor; single pass intermittent sand filter; and decentralised wastewater treatment system. The Board would execute 11 packages, and six others would be implemented through the Centre for DEWATS Dissemination (CDD), a Bangalore-based consultant.

<http://www.hindu.com/2008/02/07/stories/2008020754210500.htm>

Livelihoods

"SHGs should take to crab fattening trade": Cuddalore: Special Officer (tsunami rehabilitation) C.V. Sankar visited Killai on Wednesday and inspected the crab fattening procedures adopted by self-help groups. He said that more number of SHGs should take to the trade as it fetched substantial income. Killai town panchayat chairman Ravichandran said that eight SHGs, comprising a total membership of 120 from the Irulas and

fishermen community, had already been involved in fattening crabs. Each SHG had been given a loan of Rs. 1.5 lakh and a subsidy of Rs. 1.5 lakh to set up ponds and buying feed. Every SHG was managing three ponds with each pond having a space to rear 90 to 120 crabs at a time.

<http://www.hindu.com/2008/02/08/stories/2008020852440300.htm>

Fishermen get transmitters: Tuticorin: Minister for Animal Husbandry P. Geetha Jeevan handed over the 'Distress Alert Transmitters' distributed by Indian Coast Guard, to five fishermen from Tuticorin and Kanyakumari districts at a function held near the fishing harbour here on Wednesday. Officials said that the low cost DAT was developed by the ISRO for the Coast Guard with financial assistance from the Centre.

<http://www.hindu.com/2008/02/14/stories/2008021451270300.htm>

"Set up training centres for fishermen": Nagercoil: Fishermen in different parts of the district have urged the Government to set up training centres to educate them on fishing and its allied activities. Even though there they had good traditional knowledge, the fishermen of Kanyakumari district lack scientific knowledge about fishing and its environment. They were not being taught the importance of fisheries conservation and habitat protection. This led to over fishing in some cases and habitat destruction in many areas. The rapid mechanisation of fishing industry under the sponsorship of capitals and capital from outside the fisheries sector resulted in damage to the ecosystem. A new avenue of income was important to meet new additional costs associated with the altered technology and other investments needed to match expanding market opportunities, said A. Maria James, secretary of Rural Uplift Centre, a non-governmental organisation working for the uplift of fishermen

community.

<http://www.hindu.com/2008/02/11/stories/2008021150500200.htm>

Revolving fund for tsunami-hit women: Pudukottai: The Canadian Red Cross Society has released a revolving fund of Rs. Six lakhs to the women members of the Community Development Groups (CDG), floated by the Pudukottai district branch of the Red Cross Society and functioning on the lines of self-help groups in the coastal villages of Pudukottai district. Each group will get Rs.50,000 and the CDG will utilise the revolving fund for internal lending, according to J. Raja Mohammed, Honorary District secretary of the Pudukottai branch of the Society. The district branch has been running six crèches each located in the coastal villages of Muthukuda, R. Pudupattinam, Meemisal, Kottaipattinam, Pudhukudi and Manamelkudi Ponnagaram for the past one decade. The Canadian Red Cross Society, impressed by the performance of the crèches, as part of relief measures to Tsunami-hit fishing women, came forward to assist the mothers of these children. The CDGs were floated, enrolling all the mothers besides the other local women in these villages, he said. The Societies from different parts of the country have donated buildings to benefit the fishermen of Pudukottai district.

<http://www.hindu.com/2008/02/16/stories/2008021653280300.htm>

Coastal Matters

Fisherfolk net cash prizes for a change: Chennai: The daily routine of fisherfolk – angling, mending nets and marking territory with verbal duelling – was performed for a different reason on the Marina on Saturday. Fishermen and women from various fishing villages along the city's coastline took part in competitions organised by the Chennai Port Trust. Angling, motor boat races, net mending and tug-of-war were the official events. The team from Nadukuppam won the angling contest by catching 5.4 kg of fish with two teams following close behind with catch weighing 5 kg each. The team from Chinna Neelankarai South won the motor boat race. Kottivakkam, Nettu Kuppam, Nadu Kuppam,

Nochikuppam, Thazhangkuppam and Odai Kuppam were among the localities represented.

<http://www.hindu.com/2008/02/03/stories/2008020358800400.htm>

Push Out Fisherfolk, Make Room For Water Sports? By Sudarshan Rodriguez The Coastal Regulation Zone (CRZ) notification introduced in 1991 by the Ministry of Environment and Forests (MoEF) was hailed as a progressive law by most fish-worker activists and environmental groups as it recognised that coastal areas needed some form of protection from unregulated development. However, the run-in period of the CRZ notification

synchronised with India's economic reforms and had a big influence on the implementation of its original objective. Now, the MoEF is planning to introduce the Coastal Zone Management (CZM) notification to replace the CRZ notification. The new notification is presumably based on recommendations of the MS Swaminathan Committee set up by the MoEF in 2004. The Committee's report falls short on several counts and the absence of citizen participation in its drafting has been a serious concern. Proindustry influences are evident in the report.

http://www.tehelka.com/story_main37.asp?file_name=Op090208do_bigha.asp

Activists seek CM's help to save turtles: Kendrapara, Jan. 31: Wildlife activists have sought chief minister Mr Naveen Patnaik's intervention regarding the rising casualty graph of Olive Ridley sea turtles after blaming the state forest department for the catastrophe. "It is a criminal negligence. The government agencies have failed to curb marine fishing and trawling operations within the 20 km long no-fishing sea zone. Turtles either get entangled in mono-filament fishing nets or are hit by trawl propellers," Mr Biswajit Mohanty, secretary, wildlife society of Orissa said.

<http://www.thestatesman.net/page.news.php?clid=9&theme=&usrsess=1&id=188201>

Fast for stopping eviction of coastal slum-dwellers: Chennai: Residents living along in coastal settlements and members of Unorganised Workers Federation observed a fast on Thursday, demanding a halt to the eviction of coastal slum-dwellers. Federation secretary R. Leelavathi said coastal slum-dwellers were not consulted by the government machineries in developing housing plans in the areas affected by tsunami.

<http://www.hindu.com/2008/02/01/stories/2008020159140400.htm>

Plea to protect sand dunes and mangroves: Nagercoil: The Government has been urged to take steps to protect sand dunes and mangrove forests in the coastal areas of the district, which served as natural barriers, minimising nature's fury in the past years. It is the bounden duty of the younger generation, particularly students, to be aware of the importance of preserving them, said

environmentalist Santhanakumar. He has undertaken a survey on the impact of sand dunes and mangrove forests after tsunami hit the coastal areas of the district.

<http://www.hindu.com/2008/01/28/stories/2008012853040300.htm>

"Casuarina plantations affecting turtle nesting habitats": Chennai: Sea turtle lovers are concerned at the disturbance caused to turtle nesting habitats along the Tamil Nadu coastline, where casuarinas have been raised by the State Forest Department. The sea turtle's egg-laying season began a month ago. Volunteers of the Chennai-based Students' Sea Turtle Conservation Network (SSTCN) had written to the World Bank stating that the Forest Department should reverse the damage done.

<http://www.hindu.com/2008/02/05/stories/2008020555100400.htm>

Adyar creek: questions remain: Chennai: Wetland restoration should be the focus of the Adyar Poonga project, according to the revised plan for the creek that was validated by a recent court order. The order, issued in the legal dispute about the nature of the project, has said that the revised plan for the creek, dated January 1, 2008, should be implemented in full.

<http://www.hindu.com/2008/02/09/stories/2008020958580300.htm>

National institute for mangrove research planned in W. Bengal: Bangalore: The Director, Ministry of Environment and Forests, J. R. Bhatt, on Thursday said the Union Government had decided to set up a national institute for mangrove research and biodiversity management for providing a scientific approach to preserving the country's mangroves as well as biodiversity. Addressing a national workshop on "Mangroves in India: Biodiversity, protection and environmental services" organised by the Institute of Wood Sciences and Technology (IWST) here, Dr. Bhatt said the institute would come up in the Sundarbans of West Bengal. The Centre would encourage States to preserve important ecosystems like mangroves by providing financial assistance, he said.

<http://www.hindu.com/2008/02/08/stories/2008020856350400.htm>

Villagers look forward to Bhandup mangrove centre: Mumbai, February 5 Fisherman Nandu

Pawar (40) is ecstatic at the prospect of having a nature park in what he calls his "native land" Bhandup. "We are locals of Bhandup village and fishing here has been our age-old occupation. However, of late, a lot of us have been finding jobs elsewhere because fishing is not lucrative anymore. The mangrove park will mean new opportunities in our own land. We can think of a plethora of respectable jobs here as guides, boat riders, guards, etc," he explains. Nearly 10,000 villagers of Bhandup echo Pawar's feelings. "We'd rather work in the place that we have inhabited for years than find jobs elsewhere," they say. "Besides, we know how living in the mangrove area saved us during the June 26, 2006, floods. We will be proud to see this land develop as a tourism zone." The state government's forest department will soon sign a formal agreement with NGO Conservation Action Trust (CAT) to develop the 452-hectare wetland between Bhandup and Kanjurmarg as a Mangrove Wetland Centre (MWC), the first of its kind in India.

<http://www.expressindia.com/latest-news/Villagers-look-forward-to-Bhandup-mangrove-centre/269631/>

Call to protect coral reefs: Nagercoil: The Nagercoil chapter of Indian National Trust for Art and Cultural Heritage here has urged the Government to protect old coral reef on the Kanyakumari coast. Its convener R.S. Lal Mohan said that it was a well-preserved coral reef protecting the Kanyakumari coast from sea erosion. These coral reefs were

responsible for high elevation of Kanyakumari. This geomorphologic feature saved Kanyakumari from tsunami, he said. "These coral reefs extend from Kanyakumari to Manakudi and even beyond. The lower portions of the coral reefs' formation have become limestone and it used for house construction. This should not be allowed, as it will weaken stability of the coast."

<http://www.hindu.com/2008/02/12/stories/2008021253350300.htm>

Sethu project will trap government in immeasurable debt: experts: Chennai: The Sethusamudram project will run the Indian government into immeasurable debt as little attention has been paid to scientific and shipping data, a panel of scientists and experts from the Coastal Action Network concluded at the release of their book on the project. While weight restrictions and slow speed in the canal mean there is little gain for the shipping industry, hundreds of crores of rupees will be spent every year for maintaining a clear waterway against natural movement of sediment from India and Sri Lanka. This would aggravate tectonic plates in the quake-prone region, destroying sensitive ecologies and ruining the livelihoods of those dependent on fishing in the area. Removal of natural barriers may also mean disasters such as cyclones and tsunamis, they claimed.

<http://www.hindu.com/2008/02/19/stories/2008021953010500.htm>

About Us

TRINet, the Tsunami Rehabilitation Information NETWORK was set up in March 2005 as a response to the broad information requirements in the state of Tamil Nadu for tsunami rehabilitation and reconstruction phases to help in sharing information between different groups working on various aspects in the different districts of the state. It was initiated by SIFFS: South Indian Federation of Fishermen Societies, ICSF: International Collective in Support of Fishworkers and the Bhoomika Trust.

This is the thirty-third newsletter prepared by Dr. Ahana Lakshmi for TRINet since the first issue was brought out in July 2005. TRINet brings out a weekly e-digest of news on tsunami rehab in all the affected countries as well as a Tamil newsletter called "Alayathi". If you would like to be on our mailing list, write to us at info.trinet@gmail.com. Visit www.trinet.in for updates

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