

enormity of the disaster began to sink in.”

Foreign aid workers and Sri Lankans raced to provide basics such as clean drinking water and latrines. “The response of the government has been excellent,” Pole says. “They forgot all the usual bureaucracy and cleaned out their store.” Emergency supplies flowed to all the affected communities, including those in the northeast controlled by the Liberation Tigers of Tamil Eelam (LTTE), the rebels’ political arm.

Lack of clean water is the deficiency felt most keenly. A high water table has flooded cesspools and tainted wells, says Bipin Verma, an emergency health expert in WHO’s Colombo office. In the days after the tsunami, local health officers rode around in trucks with megaphones ordering people to boil water. “Now people understand what they have to do,” Fazal says.

Nutrition is a growing concern, says Verma. The price of vegetables has risen since the disaster, and Sri Lankans have been eating less fish out of the false fear that fish are contaminated by corpses in the water.

The risk of vector-borne diseases still looms. “To me, that’s the biggest health threat,” says Verma. Dengue and malaria, both transmitted by mosquitoes, are endemic in Sri Lanka. WHO has borrowed 50 pesticide fogging machines and distributed them throughout the country. Chlorination, sanitation, vector control: Basic measures can save lives. “We don’t have to have new science to do this,” says Bradt.

The healing process

It will be a triumph if Sri Lanka averts a major disease outbreak. Other consequences of the disaster—the psychological repercussions—cannot be avoided. “There’s an enormous amount of trauma,” says Kan Tun, WHO representative to Sri Lanka. First came shock. “People were paralyzed by despair,” says Pole.

Four weeks after the tsunami, survivors are at risk of posttraumatic stress disorder. “In my experience, adults are more vulnerable than children,” says Verma. Teams of caregivers with SHADE, a nonprofit based in Vavuniya, Sri Lanka, are working with victims in the Kalmunai region. Fear is the most prevalent emotion, says SHADE’s Jeyabalini Gopal: “Children are afraid of another wave; they even get frightened by small sounds.” Her team’s main tool is art therapy. “They draw pictures of their surroundings before and after the tsunami,” Gopal says. “That allows them to express what they can’t yet talk about.”

SHADE has worked with victims of violence in the war-torn northeast, where the government and LTTE fought a long-running civil war that was halted by a cease-fire in

Nuke Policy Leads India to Build Own Network

NEW DELHI—India’s determination to protect its seismographic secrets may result in two tsunami early-warning systems for South Asia.

Last week the government announced it would spend \$30 million on a system independent of a multinational network for the region being planned by UNESCO (*Science*, 21 January, p. 331). The decision is driven by India’s long-standing refusal to allow international parties to operate seismic monitoring stations on its territory, a policy that stems from its rejection of the global Comprehensive Test Ban Treaty (CTBT) to preserve its right to conduct underground nuclear tests.

“We are not joining a U.N.-led system,” declared Kapil Sibal, India’s minister for science, technology, and ocean development, at the end of a 2-day meeting here last week on the aftermath of the deadly South Asian earthquake and tsunami. “We will not hesitate in forging alliances with other countries, but we have to have our own tsunami warning system.”

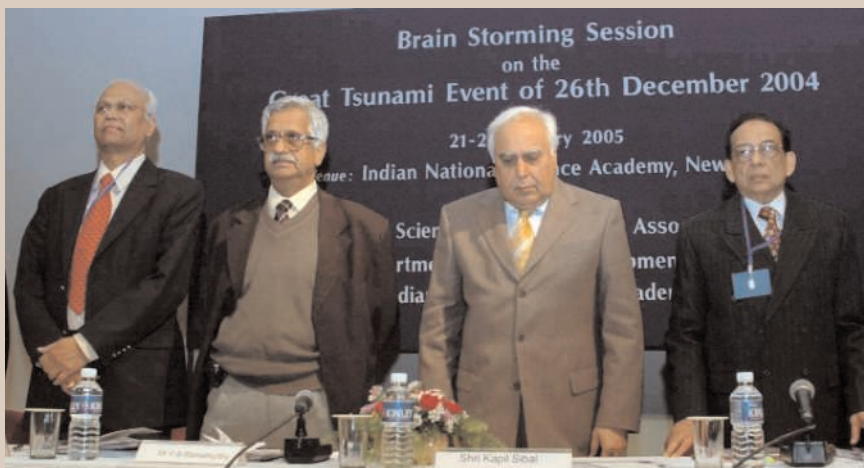
The meeting offered scientists from around the world a chance to mull over preliminary data collected since the tragedy and begin planning to mitigate the impact of future events. Indian officials said the tsunami center likely will be housed at the Indian National Centre for Ocean Information Services (INCOIS) in Hyderabad and that it will monitor other marine hazards, including cyclones. “India is the natural choice for establishing a regional early-warning center,” says Costas Synolakis, a tsunami specialist at the University of Southern California in Los Angeles and a participant at the meeting, noting that the “[scientific] backbone already exists in India.”

The Indian network would for the first time include a dozen Deep-Ocean Assessment and Reporting of Tsunamis (DART) data buoys in the Bay of Bengal, the Arabian Sea, and the southern Indian Ocean. India also plans to quadruple its current lineup of 12 online tide gauges and triple the 51 seismic stations it now operates. Officials also pledged to analyze initial earthquake reports in 10 minutes, down from 30 minutes, and improve modeling of tsunamis and their impact on land. Sibal pledged to have the key elements of the network in place in about a year.

The world’s most reliable and open seismology network is the Global Seismographic Network maintained by the Incorporated Research Institutions for Seismology (IRIS), a Washington, D.C.-based consortium. But India is not part of this network of more than 100 stations, because it never signed the CTBT. “There is a deep suspicion among the global community whether India will share online seismic data since it has never done so in the past,” says Synolakis.

Last month’s tsunami has triggered a review of that policy, however. Valangiman Subramanian Ramamurthy, secretary of the Department of Science and Technology, told *Science* that “our existing policy of not sharing online seismic data has to change” so that scientists can do a better job of understanding tsunamis. India is reassessing its relationship with IRIS, he said, hinting that one change could be a willingness to share data, in real time, on earthquakes of magnitude 5 and higher. That threshold, observers note, would be well above the level generated by any test of India’s nuclear arsenal.

—PALLAVA BAGLA



In their memory. Top Indian scientists join science minister Kapil Sibal, with head bowed, during a moment of silence for the tsunami victims.