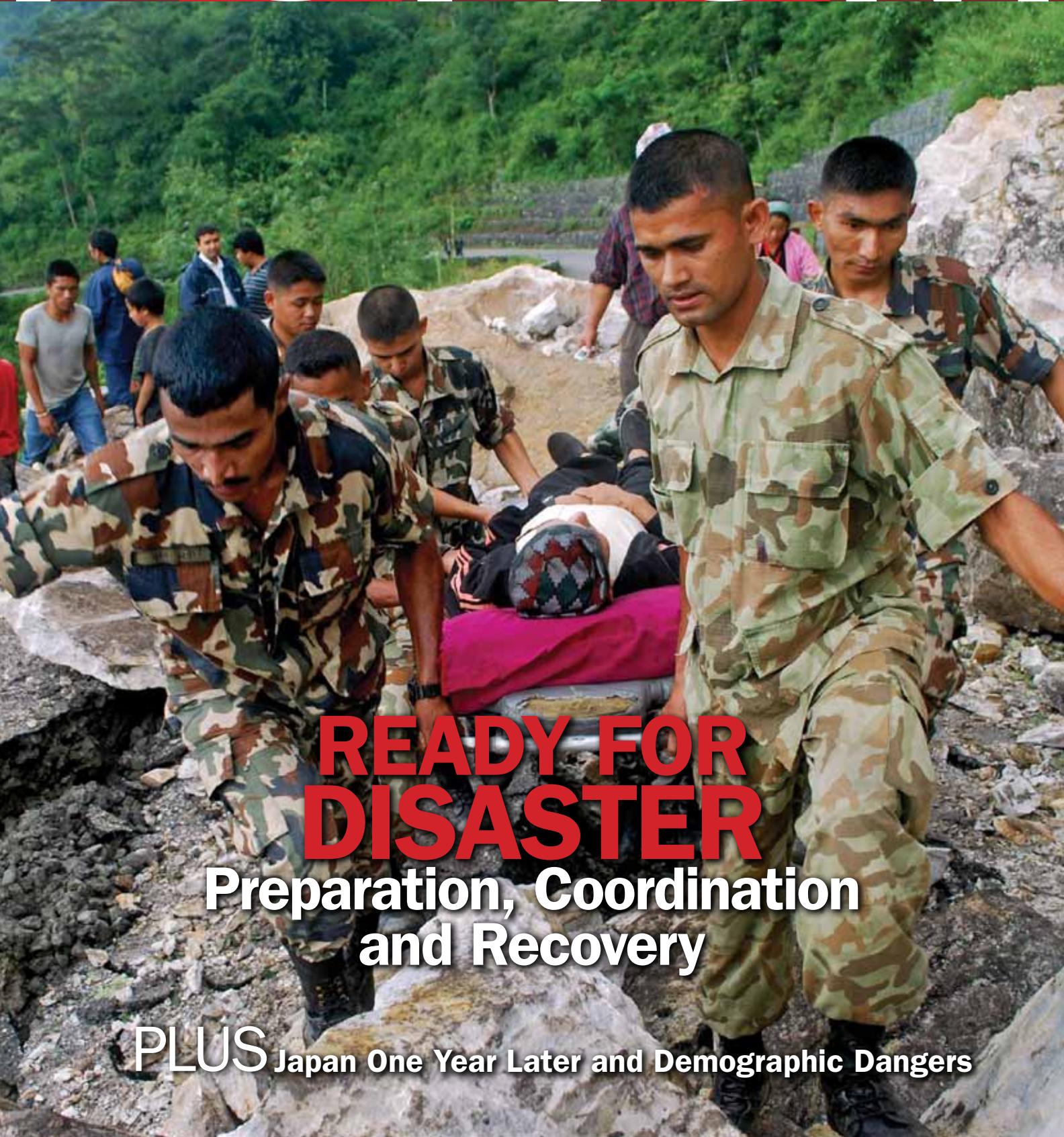


FORUM



READY FOR DISASTER

Preparation, Coordination
and Recovery

PLUS Japan One Year Later and Demographic Dangers



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Nepalese Soldiers carry a man injured in Dhankuta District during a landslide triggered by a magnitude-6.9 earthquake that hit Nepal in September 2011.

REUTERS



U.S. PACIFIC COMMAND

Dear Readers,

Welcome to *Asia Pacific Defense FORUM*. In this edition, we focus on security issues requiring cooperative approaches, most notably disaster response, humanitarian assistance and peace-support operations. Relieving human suffering is perhaps the most fundamental of common interests, so it offers opportunities for nations, militaries, international governmental organizations such as the Association of Southeast Asian Nations (ASEAN) and nongovernmental organizations to

cooperate, develop trust and empower nations to respond both domestically and in support of their neighbors. Regional exercises in peace-support operations, such as Khaan Quest, also use common interests to promote cooperation and provide Asia-Pacific militaries positive external focus.

The 2011 chain reaction of a magnitude-9.0 earthquake, a 10-meter tsunami and a nuclear disaster in Japan illustrated the power of nature to destabilize a region along several dimensions. More importantly, despite Japan's own impressive resiliency, the triple disaster demonstrated the vulnerability of every nation in the Asia Pacific to unexpected catastrophes. It also demonstrated the need to mature relationships between and among nations to prepare locally, nationally and regionally. Japan lost tens of thousands of citizens, but the losses would have been much worse without measures taken by the government before and after the disaster: Japan prepared its citizens, infrastructure and warning systems, and then welcomed a hundred nations and almost two dozen militaries that came to their aid.

Nepal's recent efforts also illustrate the complex challenges to preparedness. The government has been preparing for the real possibility of catastrophic earthquakes and the consequences that could befall the Kathmandu Valley. Since the valley's population has grown fourfold in the past decade, an earthquake will increase the risk of tremendous loss in lives, injuries and homelessness. Nepal's geographic isolation may require its people to be their own first responders, so Kathmandu is preparing its military and citizens accordingly. Nepal is also increasing its resilience through pre-positioned supplies and early warning systems, but it will continue to rely on external consortiums such as the U.S.-funded infrastructure project with the United Nations, Red Cross, Asian Development Bank and the World Bank.

Although the amount of disaster aid and the number of organizations continue to grow, the most difficult task is often logistical coordination among governmental, military and nongovernmental humanitarian groups, all of which bring unique capabilities, requirements and connections with local communities. The ASEAN Coordinating Center in Indonesia and the Malaysian government's regional U.N. response depot facility are both contributing to these efforts.

The overall case for disaster preparedness is clear: In a region that faces the highest risk of natural disasters on the planet, preparedness saves millions of lives, protects societies, safeguards the broader stability and even preserves budgets. It also challenges us to think differently. Just as we bear responsibility to think creatively to avoid military conflict, we must do the same to protect our citizens from disasters that we cannot avoid. Finally, and perhaps most importantly, successful cooperation in these areas not only insulates societies from disaster, but it also builds relationships and makes cooperation itself all the more attractive.

As usual, this issue includes a variety of interesting stories. We hope you find it beneficial. Please send your comments and insights to contact-apdf@apdforum.com.

All the best,

Robert F. Willard

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APD FORUM

Ready for Disaster

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AGENCE FRANCE-PRESSE

SPACE-AGE FLOOD RESPONSE

Satellites hovering 35,800 kilometers above the planet are helping to protect people from disasters in countries such as Thailand, Cambodia, Vietnam and Laos, where floods affected the lives of millions of people in 2011.

The satellites snap images and transmit them back to Earth, where analysts can pinpoint and predict flooding. National, regional and local officials can use the information to allocate resources, conduct evacuations and enhance coordination.

The maps from the U.N. Institute for Training and Research's Operational Satellite Applications Programme, for example, are developed with street data from Google and OpenStreetMap. Governments and relief groups can then overlay other information, such as population data. Doing so allows them to more quickly and accurately estimate the number of people in a specific area and allocate resources accordingly.

"Then everybody has the same emergency information, so that increases the coordination," said Einar Bjorgo, head of the U.N. program's rapid mapping unit.

In October 2011, Thailand was using this type of data to determine which households should receive flood victims assistance, said Paranal Kerdpol, a spokeswoman for Geo-Informatic and Space Technology Development Agency, which was operating a satellite "war room" in Bangkok.

Meanwhile, U.N. analysts in Geneva were developing a baseline map to better model Thailand's flooding.

"Technology is not really a major limiting factor anymore. It's what we do with it," said Craig Williams, a regional information management officer with the U.N. Office for the Coordination of Humanitarian Affairs. IRIN, www.irinnews.org



UNOSAT

Satellite image of area north of Bangkok, Thailand, in October 2011.

ACROSS THE REGION

AGENCE FRANCE-PRESSE



SOUTH KOREA

South Korean pop band JYJ

POP PROMINENCE

How did Seoul become Asia's capital of cool?

Even in the Philippines, once an undisputed bastion of American pop and Hollywood movies, South Korean pop music, soap operas and fashion are now all the rage.

The phenomenon, known as "Hallyu" in Korean, took off around the start of the millennium with TV soap operas that became huge hits with Asians of all ages.

Then came K-pop music, with its flashy

choreographed dance moves, now imitated by teenagers from Beijing to Bangkok.

South Korean President Lee Myung-bak ranks the overseas success of K-pop among his country's top achievements, and the government operates a "Korean Wave" index to gauge the fever for its cultural exports.

Taiwan took the top spot in 2010, nudging out Japan. China, Thailand and Vietnam are also on the list, and the state-funded Korea Foundation for International Culture Exchange says Malaysia will be added this year and the Philippines as early as 2012.

"The Republic of Korea is making young people all around the world wild with K-pop," Lee said in an August 2011 speech marking Korea's liberation from Japan's 1910-1945 colonial rule. The Associated Press

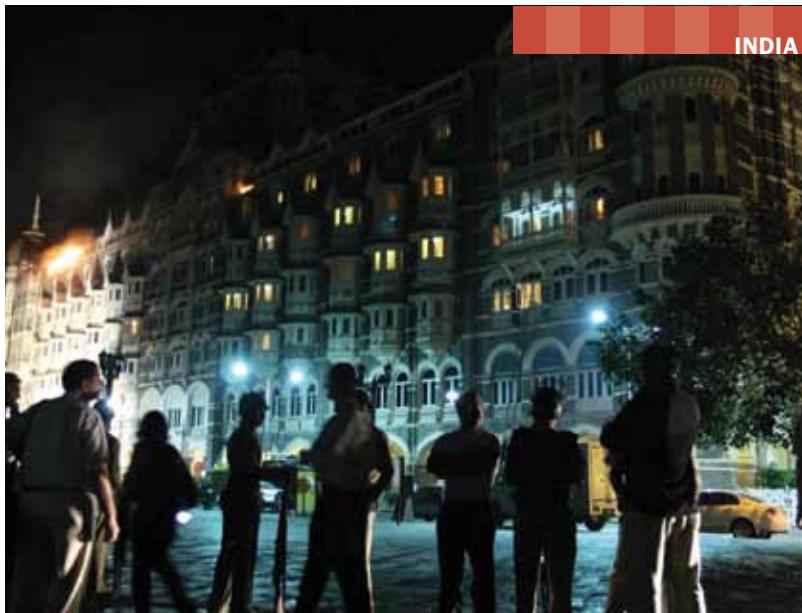
Insights from Counterterrorism Experts

Indian delegates shared their extensive insights on lessons learned and challenges encountered during the November 26, 2008, Mumbai attacks (sometimes referred to as the 26/11 attacks) with delegates from the United States and Australia during a weeklong subject matter expert exchange in September 2011 in Los Angeles, California.

The U.S. Embassy in New Delhi's Federal Bureau of Investigation Attaché, Daniel C. Clegg, appreciated the perspectives offered by the Indian experts: "There were many aspects of the 26/11 attacks that were unique, presenting unprecedented new challenges. Learning firsthand about the Indian experience during these horrific attacks was an extremely beneficial exercise and will allow for better strategic contingency planning by U.S. experts."

Indian experts led discussions on best practices for command-post setup, interagency coordination, hostage negotiations, first-response strategies for encounters with active shooters, improvised explosive and post-blast investigations, and maintaining cooperative working relationships with the media during times of crisis. Such exchanges illustrate ongoing areas of cooperation and partnership between the U.S. and India in counterterrorism and policing.

INDIA



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MEDICAL TOURISM BOOM

One of Asia's fastest-growing industries, medical tourism, shows no signs of losing steam even as the global economy wobbles. In fact, traveling abroad for medical treatment is now a multibillion-dollar business in the region.

From a nip and tuck to a heart bypass, hospitals from India to Singapore and South Korea treat more than 1 million foreign patients a year. They are lured by cut-price surgery, no waiting lists, cutting-edge technology and highly trained doctors.

Industry experts predict medical tourism in Asia will grow at a rate of 15 to 20 percent a year, mainly due to the emergence of new wealth in the region.

"Asian medical tourism ... seems to be increasing as affluence and mobility increase in Asia," said David Vequist, head of the Center for Medical Tourism Research at the University of the Incarnate Word in Texas. "Consumer choice is a powerful force now in health care and is impacted by aging and increasingly heavier, sicker and more needy populations in Asia."

Medscape News website has forecast medical tourism in Asia could generate U.S. \$4.4 billion by 2012. Reuters



AGENCE FRANCE-PRESSE

New Food Security Institute

Indian and Mexican researchers are teaming up at a new institute in India to help meet food security challenges in developing nations.

The Indian Council of Agricultural Research and Mexico's International Maize and Wheat Improvement Center will work together to offer sophisticated crop research facilities at the new institute that launched in October 2011. Named the Borlaug Institute for South Asia, it will have three locations in India: Punjab in northern India, Bihar in eastern India and Madhya Pradesh in central India.

The institute is named in honor of the 1970 Nobel Peace Prize winner and wheat expert, Norman Borlaug (1914–2009), whose work on high-yielding, dwarf varieties of wheat helped trigger India's "green revolution" in the 1960s.

"It would not be an overstatement to say that Norman Borlaug is a household name in India," India's minister for agriculture and food processing, Sharad Pawar, said at the institute's launch. SciDev.net

CAPTAIN JIHAD



Above: Students in Jakarta, Indonesia, read an anti-extremist comic book by Nasir Abas that chronicles his transformation.

Inset: Abas has been trying to convince his former comrades in Jemaah Islamiyah that their view of the Quran is wrong.

A former terrorist transforms into a comic book hero

STORY AND PHOTOS BY THE ASSOCIATED PRESS

The real-life adventures of former al-Qaida-linked militant Nasir Abas have become the subject of a comic book in Indonesia, chronicling his transformation from foe to invaluable ally in the fight against terrorism.

The story of the soft-spoken, seemingly mild-mannered 42-year-old, who is recognized by strangers on the streets and even asked for the occasional autograph, is well-known in the world's most populous Muslim country.

He went from helping to train Muslim extremists who carried out some of Southeast Asia's deadliest attacks, including the 2002 Bali bombings, to informing police about the inner workings of the Jemaah Islamiyah (JI) network. He has also joined a government program to convince convicted terrorists that killing unarmed civilians in the name of their faith is wrong.

"I want children to learn from my experience," Abas said of the colorful 137-page comic, "I Found the Meaning of Jihad," which began appearing in bookstores in September 2011 and was handed out at some schools and libraries. "I don't want them to make the same mistakes."

Indonesia, hit by a string of suicide bombings that has killed more than 260 people since September 11, 2001, has been widely praised for its anti-terror fight. The government, partly through the use of paid informants and former militants working to persuade hard-liners to change sides, has rounded up 680 suspects, trying and convicting many of them in open courts.

Abas, a Malaysian national who now lives in Jakarta, Indonesia, with his family, has been one of its biggest success stories.

Kids at an elementary school squealed when shown a copy of the book by nonprofit publisher Lazuardi Birru and called out to their friends, who eagerly huddled around and flipped through the lively, glossy pages. More than 10,000 copies have been printed so far.

"Ohhhh. That's gotta be Osama bin Laden," said 10-year-old Anif Ahmad Aulia, pointing at a picture of a white-bearded cleric.

"Ya, he's evil," chimed in Qinthara Taqiyah, a fifth-grade girl. "But I like this comic ... very colorful and fun!"

"Is that the hero?" another said, pointing at Abas.

The comic traces Abas' early days at an Islamic boarding school to his recruitment as a fighter in Afghanistan in the late 1980s.

With a knack for weaponry, he rose quickly through the ranks of JI, which was trying to carve out an Islamic state.

The dark shift came in 1998, when bin Laden issued a fatwa urging revenge against the Americans "on both military and nonmilitary" targets. Some JI members agreed, saying that included all Christians and Jews. But others, Abas included, believed Islam only condoned the killing of "enemies" when there was a clearly defined battleground and a direct threat.

A series of deadly attacks followed in late 2000.

"I knew JI members were involved," Abas said in an interview. "But I was against it. It was very clear to me that there was no benefit for Islam or our struggle."

On October 12, 2002, some of the men Abas helped train blew up two Bali nightclubs, killing 202 people, many of them foreign tourists. Abas felt guilty and considered this a "disaster" for JI.

He was captured in April 2003 in the massive security crackdown that followed. Convinced he was going to be tortured and possibly killed, he was surprised to see how gently he was treated by his interrogators. They had apparently learned from other arrested militants that he did not support the attacks.

Abas said a prayer and soon started feeding police details about JI, leaving it severely weakened.

From that point on, Abas tried to convince his former comrades that their interpretation of the Quran was wrong.

"This is my jihad now," he said, adding that he knows he has made many dangerous enemies and has to be careful.

Security experts say it's good to find creative ways to battle hateful ideologies spread by al-Qaida and other extremist groups, as long as it's part of a comprehensive counter-radicalization strategy.

"We know young people are often targeted for recruitment by jihadist groups," said Kumar Ramakrishna, a terrorism expert in Singapore. "So reaching out in innovative ways, such as through pop music and comics ... is certainly a very good idea in my view."



THE Next



IMAGES BY ISTOCK

ONE



NEPAL PREPARES FOR THE **quake** OF THE CENTURY FORUM STAFF



FORUM STAFF

**Wooden boards bow out as they support a leaning structure in Kathmandu, Nepal.
Houses such as this dot the landscape of the capital city and are still in use by families.**



ISTOCK

B

ijay Upadhyay pops in and out of courtyards in Nepal's capital city like a tour guide navigating his way through a museum's galleries. The relics he's highlighting on this balmy morning in August 2011, however, aren't the best Kathmandu Valley has to offer.

They're the most vulnerable.

Deteriorating buildings

line the streets, supporting new construction on top that's stacked two and three stories high. Homes are built so close to one another that residents here call them "handshake" or "kissing" houses. Dozens of leaning structures are buttressed by wooden boards that look ready to snap at any time.

Many residents believe, Upadhyay told *FORUM*, that because some of these buildings survived Nepal's last, great earthquake in 1934 — a magnitude 8.1 that killed more than 8,500 people — they can survive anything.

"There are only a few people who remember or who were around during the 1934 earthquake," said Upadhyay, a Community Based Disaster Risk Management program manager for the National Society of Earthquake Technology-Nepal (NSET). "And for all others, it's just a fairy tale."

The lore moved closer to reality for many Nepalese on September 18, 2011. A magnitude-6.9 tremor struck the northeastern India-Nepal border in India's Sikkim mountains, about 270 kilometers east of Kathmandu. Authorities counted the death toll at 112 in late September, according to *The Times of India* newspaper.

The earthquake happened along the same tectonic plates where, millions of years ago, shifting created the world's highest mountain range, the Himalayas, geologists explained. Nepal itself sits along the Alpine-Himalayan belt, where 17 percent of the world's major earthquakes take place, according to *The Wall Street Journal* blog India Real Time.

Statistics such as this, combined with assertions by some seismologists that Nepal should expect a great quake, one registering magnitude 8.0

or higher on the Richter scale, approximately every 75 years, has officials in this landlocked country on high alert. Nepal's Ministry of Home Affairs has worked for nearly two years with local and U.S. military officials, as well as local and international nongovernment organizations, to create a national emergency operations center and disaster response plan. Working groups have been meeting to map out ways to deal with internally displaced persons, displaced civilian camps, food and water shortages, communications, access to roadways and security, among many other critical issues that will emerge when disaster strikes.

"We are still in the planning stage, but this process will never end," Brig. Gen. Ramindra Chhetri, the Nepalese Army's director of public relations, told *FORUM*.

“EVERYBODY WHO IS IN OUR COMMUNITY NEEDS TO KNOW THEIR ROLE AND RESPONSIBILITY [BECAUSE] MOST OF THE PEOPLE WHO ARE GOING TO SURVIVE
will be saved by their neighbors.”

~ Retired Lt. Gen. John Goodman,
former director of the Center for Excellence in
Disaster Management and Humanitarian Assistance

Despite the September earthquake, experts recognize Nepal's geographic location dictates the need to continue planning for the inevitability of a great quake.

"The occurrence of this quake does not lower down the threat from the great earthquake which we expect in the Himalayas," C.P. Rajendran, a geologist at the Indian Institute of Science in Bangalore, India, told *The Himalayan Times*

newspaper just days after the September 2011 quake. “We need to treat each and every earthquake in a special way. ... The fact remains that some historically earthquake-deficient parts of the Himalayas have the potential to generate large earthquakes any time, irrespective of the present earthquake.”

In the last decade, the population in Kathmandu Valley has swelled from about 1 million to roughly 4.5 million people. If an earthquake hit Kathmandu with the same magnitude that one struck Haiti in January 2010, Nepal would experience the loss of about 200,000 lives, and another 200,000 people would be severely injured, NSET officials predict. In addition, 1.5 million people would be rendered homeless, and 60 percent of homes would be destroyed, the U.N.’s IRIN news agency reported.

“At the moment, we are not very sure whether or not this will be repeated,” Rita Dhakal, humanitarian affairs specialist for the U.N. Office for the Coordination of Humanitarian Affairs, told IRIN after the September quake. “Regardless, this is a signal for Nepal to be prepared.”

LESSONS FROM HAITI

U.S. Ambassador to Nepal Scott DeLisi described Nepal as “a Haiti sitting on top of a Japan-sized

earthquake” at an August 2011 disaster response exercise in Nepal organized by the U.S. Pacific Command’s Center for Excellence for Disaster Management and Humanitarian Assistance located in Hawaii.

“What that means should be apparent if you’ve watched the footage from those other disasters,” DeLisi said. “Does the thought of this city crumbling to dust in a blink of an eye terrify you as it does me? It should, because that is exactly what could happen.”

Many Nepalese officials involved with disaster planning credit DeLisi’s arrival in 2010 and his intense passion for preparing the people of Nepal for survival for the momentum that the country has gained in putting together a disaster response plan.

“Experts tell us that every dollar spent on effective preparedness will save anywhere from [U.S.] \$10 to \$15 in response costs later,” DeLisi said. “Preparedness and risk reduction make sense if we want to save lives, if we want to preserve societies, and if we want to protect our budgets.”

In Nepal, more than 16 major earthquakes have been recorded since 1223, according to a 2009 disaster report by Nepal’s Ministry of Home Affairs. Yet many nationals still have never experienced a quake.

“**W**e need to treat each and every earthquake in a special way. ...
THE FACT REMAINS THAT SOME HISTORICALLY EARTHQUAKE-DEFICIENT PARTS OF THE HIMALAYAS HAVE THE POTENTIAL TO GENERATE LARGE EARTHQUAKES ANY TIME, IRRESPECTIVE OF THE PRESENT EARTHQUAKE. ”

~ C.P. Rajendran,
Indian Institute of Science geologist



ISTOCK

NEPAL ARMY

Nepalese Soldiers provide humanitarian aid and disaster relief during the 2008 Kosi flood.

"People are not sure whether it is happening or not," Upadhyay told *FORUM*. "We have been able to give them the information. Now, we have to motivate them toward being safer."

That motivation extends to authorities responsible for creating and implementing disaster response plans, as well.

Chhetri, for example, advocates for prepositioning of equipment, such as helicopters, outside Kathmandu Valley to improve rescue and recovery efforts. The Nepalese Army's helicopter fleet has deteriorated over the years, and most craft are no longer operational due to lack of maintenance as the military's budget has been cut, Chhetri added. Mi-17 helicopters are the most useful in Nepal, given the country's terrain and the aircraft's versatility, Chhetri said. He'd like to see as many Mi-17s as possible brought into Nepal. If that happens, "we will be ready to a certain degree" to respond better to more parts of the country in a disaster, Chhetri said.

"Despite the lack of adequate equipment, we have been able to mobilize our troops instantly to the scene of disaster," Chhetri said. "There are a lot of organizations that are also fairly prepared to extend cooperation."

The International Federation of Red Cross and Red Crescent Societies (IFRC) claims to be the largest humanitarian organization with a local base in Nepal. It has a presence in each of the country's 75 districts and about 90,000 volunteers, according to Victoria Bannon, IFRC's country representative in Nepal.

"There's been quite a lot of progress in bringing attention to the need of better preparedness for every disaster," Bannon told *FORUM*.

Getting international humanitarian organizations involved in the planning stage numbers among the ongoing challenges, however, until a disaster actually strikes, she said. "One of the challenges is partly linked to resources."

HELP FROM WITHIN

To offset the challenge of securing outside help before a disaster, officials have actively spread the message for citizens of Nepal to gain life-saving skills, such as CPR, to increase the chance of survival for themselves as well as their neighbors. To that end, retired Lt. Gen. John Goodman, former director of the Center for Excellence in Disaster Management and Humanitarian Assistance, stressed the need for every person in Nepal to be involved in the planning process for a major disaster.

"For the first 24 to 48 hours, your neighborhood is your neighborhood," Goodman said during opening remarks at the disaster response exercise organized by his group in August 2011. "Governments aren't there [in the first 48 hours] when the community needs them most. Everybody who is in our community needs to know their role and responsibility [because] most of the people who are going to survive will be saved by their neighbors within the first 48 hours after an earthquake."



Nepalese residents attempt to remove a damaged vehicle after a house wall collapsed in Kathmandu during the September 18, 2011, earthquake.



AGENCE FRANCE-PRESSE

The Nepalese Army has also produced television programs designed to teach life-saving skills to the general public, Lt. Col. Madhukar Singh Karky, who leads the Nepalese Army's disaster program, told *FORUM*. The programs will teach locals how to prepare survival kits and create a disaster plan for their family.

"We realize we have gaps and are reaching out to people to fill those gaps," Karky said.

ENABLING OUTSIDE ASSISTANCE

Previous earthquakes have proven that when disaster strikes, outside aid will come, said Lt. Col. Anup Jung Thapa, who leads a group of first responders for the Nepalese Army. "The precedence is there for that good will to take hold," he said. However, the challenges of getting into Nepal due to its geographic location, and the fact that the country has one international airport that is expected to be inoperable, means outside help will be delayed, Thapa said.

"The first seven days is when you will be saving lives," Thapa told *FORUM*. "In that initial part, we will be alone, despite everyone's best wishes. ... Distances and remoteness has made it difficult for foreign forces to become early responders."

Sabin Pradhan, deputy superintendent of the Nepal Police, said officers have been working with communities and spreading the message of their key role during a disaster.

"There is no doubt that community response is the quickest one," Pradhan said during a presentation at the disaster response exercise.

Pradhan said police will be among the first responders and will maintain security with other national and international organizations. At any time, there are more than 3,200 police ready to deploy immediately, he said.

"One telephone call to our office activates us and we are mobilized," Pradhan said.

BECOMING EARTHQUAKE RESILIENT

Kathmandu escaped major damage from the September 2011 earthquake because of its distance from the epicenter, according to *The Kathmandu Post* newspaper. Had the quake struck closer to the capital city, the outcome would have been drastically different, with structural damage contributing to a large number of casualties, the paper reported.

"It is of utmost importance to identify those buildings that are at high risk and carry out reconstruction or seismic retrofitting," Sagar Krishna Joshi, national program manager for Nepal's Earthquake Risk Reduction and Recovery

“



XPERTS
TELL US THAT
EVERY DOLLAR
SPENT ON EFFECTIVE
PREPAREDNESS WILL
SAVE ANYWHERE FROM
[U.S.] \$10 TO \$15 IN
RESPONSE COSTS LATER.

Preparedness and risk reduction makes sense if we want to save lives, if we want to preserve societies, and if we want to protect our budgets."

~ Scott DeLisi,
U.S. ambassador to Nepal

Preparedness Program, told *The Kathmandu Post* in September 2011.

Others also share Joshi's priority of making buildings around the city more earthquake resilient.

"My preoccupation is how do we reduce the number of people we have to extract from the rubble," Robert Piper, head of the U.N.'s humanitarian effort in Nepal, told *The Times of India* newspaper in a March 2010 article. Piper's focus has been working with a consortium that includes the U.N., Red Cross, Asian Development Bank and the World Bank to execute a U.S. \$130 million project aimed at improving key structures such as schools and hospitals in Nepal to save lives, according to *The Times of India*.

"It's not going to save every life," Piper told the newspaper. "We can't retrofit every building in the Kathmandu Valley. But if we retrofit all the schools, if we fix the hospitals, if we shift the bridges, if we put water sources where people are going to be evacuated ... we're going to have an impact." □

When Seconds Count...



Early
Warning
Systems
Can Save
Lives



This stone erected in 1933 on a hillside in Aneyoshi in Japan's Iwate prefecture warns of the danger posed by tsunamis of past centuries. The inscription reads, "A house on high ground will lead to peace and happiness for posterity." That year a tsunami killed thousands along the rugged shore.

BY JOHN BUMGARNER

On the morning of December 26, 2004, a massive earthquake rumbled deep in the Indian Ocean. Within hours, tsunami waves slammed into the coastlines of 14 countries, killing more than 200,000 people and displacing almost 2 million more from their homes. Indonesia was the hardest hit, followed by Sri Lanka, India and Thailand.

Hailed as one of the deadliest natural disasters in recorded history, this catastrophic incident forged international determination to improve early warning systems for tsunamis. Despite limitations, as humans, in fighting nature, countries across the Asia Pacific have been working ever since to build tsunami-resilient communities. Deploying the latest technology to save lives has been a priority in many countries in the region. Critics, however, contend that progress has not occurred quickly enough, and more work needs to be done to better anticipate and guard against future events.

In March 2011, a major tsunami, also triggered by an undersea earthquake, struck Japan with waves tens of meters in height. Some waves traveled almost 10 kilometers inland. More than 15,000 people died, and the immediate secondary effects, such as power outages, affected millions more. Some of the secondary effects have been long-lasting and expensive. Damage to the Fukushima nuclear power plant on the Japanese coastline reduced the supply of electricity, threatened human health and required a costly cleanup that is ongoing. Overall, the cost estimates for this disaster hover in the tens of billions of dollars, making it the most expensive natural disaster on record.

In this disaster, however, early warning systems helped to avoid further loss of life in Japan, where the Japan Meteorological Agency (JMA) notified citizens about an earthquake capable of generating a tsunami off their coast seconds after the shaking began.

Countries to Japan's south, such as Indonesia and the Philippines, also activated their tsunami warning systems. They are connected to the Pacific Tsunami Warning System, run by the United Nations Educational, Scientific and Cultural Organization's (UNESCO's) Intergovernmental Oceanographic Commission. The system issued its tsunami warning within three minutes of the earthquake. In the Philippines, local governments evacuated more than 200,000 villagers in coastal regions. Although the waves that hit the coast proved to be only seven-tenths of a meter high, officials at the Philippine Institute of Volcanology and Seismology considered the evacuation a success, crediting automatic alerts sent by mobile phone for getting the warnings out effectively.

The risk of a natural disaster, and especially a tsunami, striking the Asia Pacific looms high compared to other regions of the world (see pages 26-27). While every day there is a 100 percent chance statistically that an earthquake will occur somewhere in the world, the most probable location for this quake, according to the U.S. National Oceanic and Atmospheric Administration, is along the Pacific Ocean's "Ring of Fire," which embraces the region. This, coupled with the fact that the Pacific Ocean is the most active tsunamic region, stacks the odds against the region.

In fact, several of the most destructive tsunamis, not only in the Pacific Ocean, but in the world, have hit

Japan. To mitigate the devastation associated with tsunamis, Japanese officials, aware of this history, have deployed an array of ocean monitoring cables and partnered with other nations to receive real-time tsunami warnings.

A Monitoring Network

The United States developed the foundation of the Pacific Ocean's tsunami warning system run by UNESCO. This highly critical system relies upon an array of sensors known as the Deep-Ocean Assessment and Reporting of Tsunamis (DART). The first sensors were deployed nearly a decade ago. The basic architecture of a single DART system consists of a buoy on the ocean surface and a tsunami meter on the seafloor. Surface buoys are outfitted with a host of advanced electronics, including a global positioning system and bi-directional satellite communication equipment. Some buoys are also equipped with an array of other sensors, such as an anemometer to measure wind speed and a barometer to measure atmospheric pressure. Most tsunami meters are also equipped with an acoustic transducer (wireless sonar) and a bottom pressure recorder.

When a tsunami traverses the ocean, the tsunami meter on the seafloor measures pressure changes in the water above the sensor. These pressure readings are transmitted to the surface buoy through an acoustic modem. Once the surface buoy has collected the tsunami meter reading, the reading is repackaged with additional sensor data (for example, sea temperature) and transmitted through the Iridium commercial satellite phone network, which immediately retransmits the information to multiple Tsunami Warning Centers, including the Pacific Tsunami Warning Center (PTWC) in Hawaii.

Within minutes of receiving the initial sensor data

from a DART, the PTWC issues a bulletin to points of contact throughout the region. Organizations can issue additional internal country warnings depending on the severity of the initial bulletin. These country-level warnings can be disseminated to citizens living in areas that could be impacted by a potential tsunami.

Other ocean monitoring networks are coming online. In 2006, an Indian Ocean Tsunami Warning System was established that includes 25 seismic stations and 26 information centers. Nations along the Indian Ocean conducted the first full-scale test of the system in October 2011, including its communication and emergency response components. Bulletins were sent by telephone, email, SMS and fax to participants in more than 20 countries. India and Malaysia also conducted evacuation drills in concert with the test.

UNESCO has also been building an international network of tsunami sensors and country-level Tsunami Warning Focal Points to receive tsunami advisories around the clock. The Caribbean and Adjacent Regions and the North Eastern Atlantic, the Mediterranean and connected Seas Tsunami Warning System will be part of this global network. Researchers, UNESCO and other officials would like to see more tsunamographs — devices that deliver real-time data on tsunamis — deployed worldwide to make more accurate predictions about the duration of tsunamis possible. Inundation maps can supplement the arrays to show where flooding will most likely occur and how severe it might be in a given community.

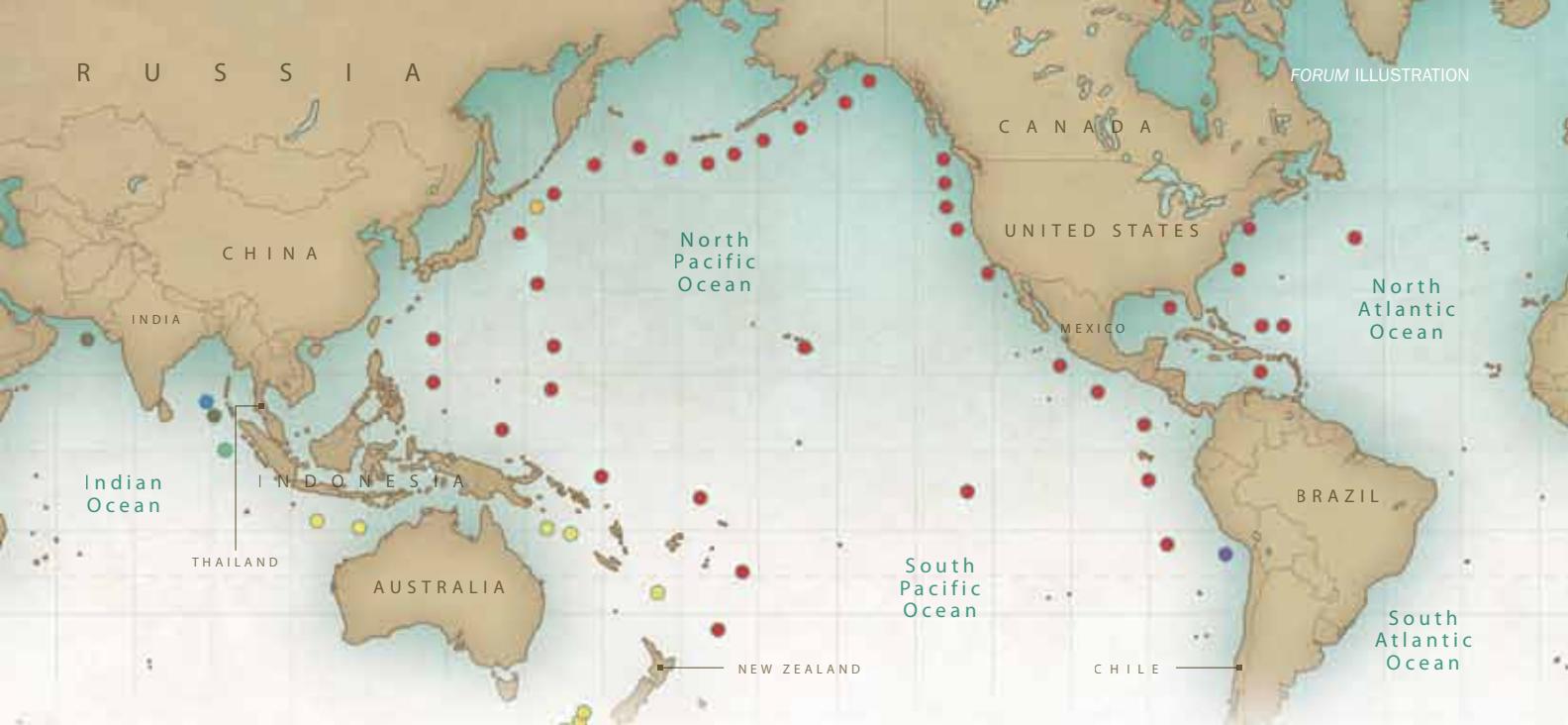
UNESCO has pointed out that additional work needs to be done by national authorities to relay tsunami warnings more quickly to civilians at risk. The weakest link in all tsunami alert systems is timely localized warnings, experts explain. Regions closest to the epicenter of an earthquake that's capable of generating a tsunami face the shortest lead time. Communities in these areas can be impacted by tsunami waves within minutes after such an earthquake. The wave can hit land as a wall of water or sweep over land as a fast-moving flood. Tsunami floods can move faster than 24 kilometers an hour, making it difficult for people to evacuate to higher ground fast enough even if a warning is sounded.

Some of the catastrophic tsunami waves associated with the Sumatra-Andaman earthquake of 2004 came ashore within 20 minutes, within 15 minutes during the Tohoku earthquake of 2011 and within 10 minutes of the Sumatra earthquake of 2010. Tsunami floods can also last for



Indian scientists work at the state-of-the-art Tsunami Early Warning Centre of the Indian National Centre for Ocean Information Services in Hyderabad in February 2011.

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DART¹ System Stations

- United States NDBC²
- Australia
- Chile
- Indonesia
- Thailand
- Russia
- India

¹ DEEP-OCEAN ASSESSMENT AND REPORTING OF TSUNAMIS

² NATIONAL DATA BUOY CENTER

hours, thwarting search-and-rescue efforts. Moreover, if warnings aren't properly extended, people who evacuate can return to their homes too soon, only to be hit by secondary flooding.

Japan currently has the most advanced Earthquake Early Warning (EEW) services in the world. When a regional seismometer detects an earthquake, it immediately signals the JMA, which can then issue an EEW alert through radio, television and cellular providers. The JMA can also trigger sirens in coastal areas that could be impacted by a tsunami associated with the earthquake. This high-tech warning system has provided millions of Japanese citizens with those invaluable seconds needed in a life or death disaster.

Expanding Warning Services

Many of the countries within the Asia-Pacific region desperately need to establish an end-to-end Earthquake and Tsunami Warning Service (ETWS). End-to-end refers to a system that incorporates individual components operating in sequence to produce a fully functioning system. The basic sensor architecture of these types of systems would include seismometers, tsunami meters and tidal gauges. Readings collected by these sensors would be transmitted to regional warning centers via wired or wireless communication channels. The tidal gauges would also be directly linked with public announcement systems in the immediate coastal area.

Warning centers need to be able to rapidly disseminate the ETWS information across multiple

media 24 hours a day in various weather conditions and to different audiences, such as foreign tourists and citizens with disabilities. Accomplishing this arduous task is challenging but not impossible. For instance, a public announcement system can be fitted with flashing lights, which can provide visual warning to those with hearing impairments, and play audible warnings in multiple languages to reach non-native speakers. Similar techniques can be used in television announcements.

Disseminating warnings to cellular phones via text-messaging services has proven useful in past natural disasters. Using this type of warning channel can be problematic, though, because the phone subscriber might not see the message in a timely manner. Installing specialized ETWS software on all cellular phones in the country could potentially alleviate this problem. This software could be designed to play an audible warning, flash the screen with a warning message and vibrate the phone. Service providers could trigger the software based on the location of the phone in relation to the ETWS warning.

As more technology advancements are achieved in ETWS systems, experts hope the world will see a dramatic reduction in the unnecessary losses of life in natural disasters. Unfortunately, earthquakes and tsunamis can never be prevented, but their impact can be mitigated through community preparedness, timely warnings and effective response. □

John Bumgarner is chief technology officer for the U.S. Cyber Consequences Unit. He has served as an expert source for various publications, including *Businessweek*, BBC, CNN, *Jane's Defence*, Reuters, *The Guardian* in London and *The Wall Street Journal*.



Volunteers bag relief goods for flood victims near the town of Calumpit, Philippines, in October 2011.
AGENCE FRANCE-PRESSE

COUNTERING CHAOS

COORDINATION SMOOTHES THE PATH FOR HUMANITARIAN RELIEF

FORUM STAFF

Chaos always erupts in the immediate aftermath of any disaster — natural, man-made or accidental. Foreign militaries and humanitarian relief organizations will eagerly offer help and be ready to descend into countries where local governments have their hands full just trying to regain communication and other basic operations. For an affected state, trying to organize a barrage of help amid such pandemonium presents an array of problems, especially when leaders are simultaneously trying to assess the country's own needs.

Coordinating and planning with partners before a disaster strikes can ease that transition to normalcy after a disaster and eliminate the duplication of efforts. The need for preregistering skills of potential responders, such as engineering or medical support, as well as bilateral agreements for offering relief have become key parts of disaster mitigation and preparedness throughout the Asia Pacific.

Amid the chaos of regrouping to rebuild after a disaster, affected states must also be aware that nefarious groups prey on countries during their time of weakness and may enter with an agenda or messages that are unacceptable to the local government. In the absence of an affected state's capability to respond adequately to a disaster and provide adequate aid, these groups may step in to further their agendas.

PREPOSITIONING RELIEF SUPPLIES

Several Asia-Pacific communities have begun exploring the feasibility of warehouses to stage nonperishable food items along with first aid and prepositioning of heavy equipment that could be used to clear critical roadways and reopen airports.

"We know that the first 48 hours are terribly important," Peter McCawley, a visiting fellow in the Indonesia Project at the Australian National University, told *The New York Times* newspaper in March 2010 in an article about Malaysia's new hub for staging humanitarian relief supplies. "A lot of people die in the first 48 hours, and usually the international community is nowhere to be seen."

Staging critical relief supplies at nearby warehouses allows a country to provide its people with immediate needs until reinforcements and sustainment elements arrive.

"When a disaster strikes, the unavailability of supplies or the slow pace in mobilizing them may cause emergency responses to be ineffective and result in increased human suffering and loss of life," according to a report on prepositioning emergency items worldwide for the nongovernmental organization CARE.



THE ASSOCIATED PRESS

Japanese tsunami survivors prepare to move to "waiting shelters" after the last evacuation center, Hebita Middle School, was closed in October 2011.

"One way in which humanitarian organizations can enhance their emergency response capacity and preparedness to natural disasters and to ensure that there is higher availability of relief supplies is by prepositioning, or stockpiling, inventory. Especially, while responding to sudden onset disasters, natural disasters that occur without a transitional phase such as earthquakes, an established prepositioning network would be most beneficial by eliminating the procurement phase of the response that will take place after the onset of the disaster otherwise. Nevertheless, structuring a prepositioning network to support emergency response for sudden onset disasters is not easy because the disasters' magnitude, timing and location can be highly unpredictable."

The U.N. World Food Programme (WFP) and Malaysian government announced the construction of a U.N. Humanitarian Response Depot facility in Subang, Malaysia, in April 2011. It is designed to be a base of operation where international humanitarian groups can stage critical relief supplies for faster access and dissemination across the Asia Pacific when a disaster strikes. The program had been operating out of a temporary facility since June 2010, according to the WFP.

"Malaysia is proud to host a vital nerve center for the international humanitarian community,"

“Malaysia is proud to be playing its role in ensuring that in times of crisis the people of this region get the emergency assistance they need.”

— Ahmad Zahid Hamidi,
Malaysia defense minister

Malaysia Defense Minister Ahmad Zahid Hamidi said in a WFP news release. “Asia is ground zero for sudden-onset natural disasters, so the importance of this hub cannot be over-estimated. Malaysia is proud to be playing its role in ensuring that in times of crisis the people of this region get the emergency assistance they need.”

Malaysia’s government has committed to provide U.S. \$1 million a year toward its operating costs, according to the WFP.

“This foundation stone represents a new ability to respond rapidly to emergency scenarios in the Asia region with lifesaving supplies — as we’ve seen only very recently with the dispatch of supplies to help the emergency response to the Japan earthquake and tsunami,” WFP Deputy Executive Director Amir Abdulla said at a ceremony announcing the new facility. “We applaud the government of Malaysia for the major investment they have made in the region’s disaster preparedness through their support of this facility.”



Thai soldiers build a mud barrier to prevent floodwaters from creeping inside the Lat Krabang industrial area in Bangkok in October 2011.

THE ASSOCIATED PRESS



Mothers carrying their babies join the line to receive food assistance in September 2011 as hundreds of evacuees of Typhoon Nesat sit on the pavement in Manila, Philippines, waiting for their turn.



Indian Army personnel unload relief items from an Army Cheetah helicopter in Gangtok in September 2011 after a magnitude-6.9 earthquake struck the northeastern Indian state of Sikkim, near the Nepal border, on September 18.

ORGANIZING RESPONDERS

Staging supplies is only part of the process related to coordination. Who does what where, and when they do it, is yet another critical piece of the response effort. Mapping out those guidelines before a disaster will go a long way in eliminating confusion, especially in a region that's riddled with disasters.

"It is a fact of life in the Asia-Pacific area that natural disasters are a growing problem," Larry Maybee, delegate to armed and security forces for Southeast Asia and the Pacific for the International Committee of the Red Cross (ICRC), told *FORUM*. "Militaries can get there quickly, and they are the ones who can respond. It is the civilian agencies that should, but they don't have the capacity available."

It takes tremendous logistical coordination to provide humanitarian assistance to those in need, especially because flooding, landslides and other debris leave roads unusable and make navigating the landscape difficult. "From a humanitarian perspective, nobody is going to be able to do everything," Maybee said.

Humanitarian organizations look to the military for their ability to move quickly and their resources to restore electricity, clear roadways and help keep the peace. However, humanitarian groups often believe they have a deeper connection with communities and better understand their needs, Maybee said. He would like military leaders to include local and international groups in the planning process prior to troops moving into a disaster-stricken area and taking initial control of the response effort.

At the same time, the military, which is called upon to respond to a natural disaster, can capitalize on

information and assistance available from humanitarian organizations already operating in the area

"We have been there long before the military gets there, and we will be there long after they leave," Maybee emphasized. "There are networks already established, and they [militaries] need to know how to leverage that."

When providing international aid to a community, the ICRC itself relies on the local presence of the International Federation of Red Cross and Red Crescent Societies.

"We go through them, and they take the lead," Maybee said. "They're local. That's critical. We go in and try to support their efforts. ... While there is a place for us to cooperate, we need to be able to operate independently in our own spheres."

Some military leaders recognize that they have a certain role to play in relief and that they must ensure their presence enhances the effort and does not interfere or disrespect an affected state's culture.

"We have to be careful we are not imposing foreign values," Maj. Gen. Timothy Keating, New Zealand's Army chief, told *FORUM*.

It is also critical for the military to understand that it must pull out as soon as local authorities have the capacity to take over, Keating said. "It is important that we let go and begin to fade back and let the civil authorities take over," he said. This allows for the local economy to begin a comeback by putting the local people back to work, even during the disaster response, by purchasing locally produced wood to rebuild homes, hiring local contractors and using regional doctors to care for the injured. □

A Region at Risk

FORUM STAFF

The Asia Pacific faces the highest risk for natural disasters of all regions on the planet. Dissected by massive fault lines and surrounded by vast expanses of ocean, the countries of the Asia Pacific have withstood earthquakes, tsunamis, volcanic eruptions, tropical storms, floods and droughts. In fact, people in the Asia Pacific are four times more likely to be affected by natural disasters than those in Africa and 25 times more at risk than those in North

America and Europe, according to the U.N. Economic and Social Commission for Asia and the Pacific. In recent decades, natural disasters have also taken the greatest economic and human toll in the Asia Pacific. From 2000 to 2008, for example, the region suffered 42 percent of the economic losses and held about 86 percent of the population affected by disasters worldwide. This graphic explores the risks the region faces.

Frequently Occurring Disasters

Top 10 types of disasters in the Asia Pacific from 1980 to 2009:

Rank	Disaster	Number
1	Floods	1,317
2	Storms	1,127
3	Earthquakes	444
4	Wet mass movements (such as mudslides)	264
5	Extreme temperatures	119
6	Droughts	108
7	Wildfires	96
8	Volcanic eruptions	71
9	Dry mass movements (such as rock slides)	20
10	Insect infestations	8



REUTERS

Asia Pacific and the World

From 1970 to 2008, more people were killed by natural disasters in the Asia Pacific than anywhere else in the world:

*NOTE: FIGURES DO NOT ADD UP TO 100 PERCENT DUE TO ROUNDING.

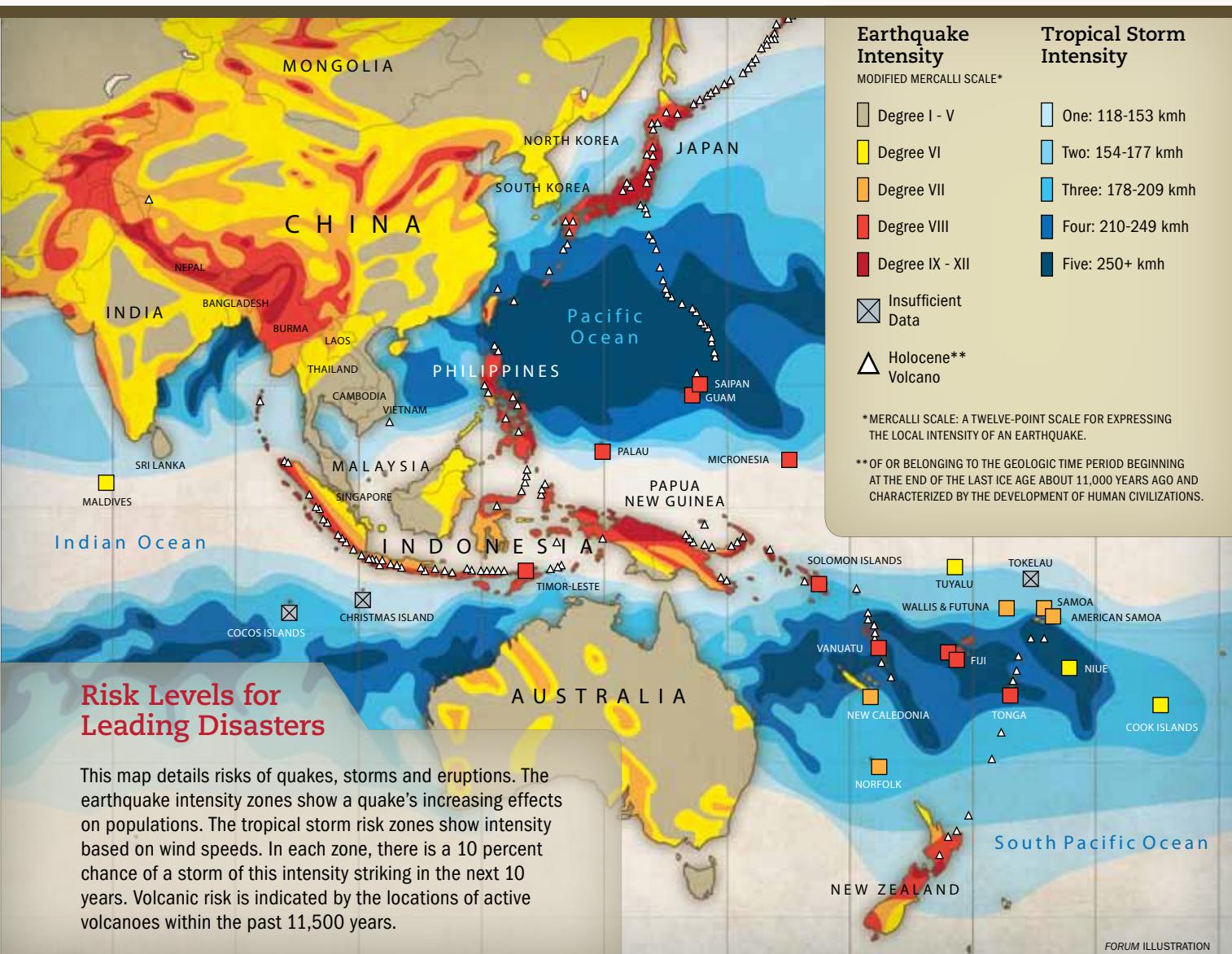
Regions	Percentage of Fatalities*
Asia Pacific	61%
Africa	27%
Latin America and the Caribbean	8%
Western Europe	3%
Central and Eastern Europe	1%
North America	1%

Hard-Hit Countries

Asia-Pacific countries ranked by number of disasters from 1980 to 2009:

Rank	Country	Disasters
1	China	574
2	India	416
3	Philippines	349
4	Indonesia	312
5	Bangladesh	229

Sources: The Asia-Pacific Disaster Report 2010, Asia-Pacific Economic Cooperation, AusAID, Global Volcanism Program, U.N. Economic and Social Commission for Asia and the Pacific, U.S. AID, U.S. Geological Survey



{ 20

Estimated number of volcanoes erupting worldwide at any given moment

1/3

Volcanoes in Indonesia and Japan account for one-third of the world's known explosive eruptions. With 150, Indonesia has the greatest number of active volcanoes.



35%

Portion of world's most deadly earthquakes that occurred in the Asia-Pacific region (1900-2011)

A Tale of Two Cyclones

Preparation can make all the difference when it comes to saving lives in a disaster. Take, for example, Bangladesh's Cyclone Sidr in 2007 versus Burma's Cyclone Nargis in 2008. The threats were similar, but the two countries reacted very differently. Bangladesh evacuated 3 million people to elevated cyclone shelters, specialized buildings that protected the people and their animals; Burma evacuated none.



	Bangladesh	Burma
Deaths	3,406	84,537
Missing	1,001	53,836
Severely affected	1 million	2.4 million
Damage	U.S. \$1.7 billion	U.S. \$4.1 billion

Media Savvy

Tips for disseminating information during a disaster

FORUM STAFF

ASoldier from Taiwan places her arm gently around the shoulders of an elderly woman who had been rescued from a village where Typhoon Morakot left hundreds of people dead. An Indonesian Soldier passes out food to grateful refugees who were displaced by eruptions at Mount Merapi. A team of Japanese and U.S. Soldiers clean mud off the floor of a high school gymnasium that was flooded during the devastating tsunami of 2011.

Scenes such as these show the strength, compassion and support that militaries provide during devastating disasters. The world would never see them without the power of the media. Journalists can be important allies for security forces during a disaster, experts say. Their portrayals of the situation on the ground can sway the affected population's morale and international sentiment. "You need to be prepared for almost a continuous vote of confidence by the press and the international community as your government responds to a disaster," Jim Welsh of the Center for Excellence in Disaster Management and Humanitarian Assistance told FORUM.

Developing a media strategy can prepare militaries and security officials to effectively disseminate public safety information and highlight rescue and recovery efforts in a crisis. The following pages feature tips for leveraging the mass media.





Before

KNOW THE RISKS. Officials know what types of disasters their country may face. Gathering background information ahead of time and predicting media questions can help officials be prepared, experts say.

MAKE A COMMUNICATIONS PLAN. Decide who will speak for your group and how information will be distributed in an emergency. Contact partner organizations ahead of time to cultivate a pool of experts who can speak on various topics, and coordinate the messages that will be relayed through the media. “If you wait until a disaster occurs and then say, ‘What’s my media plan?’ it’s likely you’re never going to catch up,” Welsh told *FORUM*.

DEVELOP RELATIONSHIPS WITH JOURNALISTS. Know which journalists cover your organization, and understand what they look for in a story, experts say. Work with them to promote your organization all the time, not just during crises. “Development of these relationships will pay dividends in the midst of a disaster by providing a credible source of information to reporters based on past interaction and by ensuring that reporters tell their stories from a position of background knowledge and not speculation,” Dennis M. Murphy and retired U.S. Army Col. Carol Kerr wrote in an issue paper for the Center for Strategic Leadership. “It also builds trust between the military that is critical to information sharing.”

PRACTICE. Invite journalists and partner organizations to help plan and participate in training exercises in which you test your disaster preparedness and your communications plan. “By bringing them into the planning phases, it helps them build an awareness of all the different things that the military is focused on when a disaster first strikes,” Mary Markovicovic of the Asia-Pacific Center for Security Studies (APCSS) told *FORUM*.

During

ACT FAST. When a disaster strikes, the information that comes out first sets the tone for what people believe, experts say. Officials should be proactive in contacting the media to disseminate information quickly and allow access to disaster sites. “Many times, leadership will get behind closed doors in that emergency operations center when they’re trying to grasp what the situation is, and they’ll leave a void for a certain amount of time,” explained Markovicovic, who teaches crisis communication and media engagement at APCSS. “They’re trying to do the right thing, but it’s also very dangerous.” Even if there’s little to share, military officials

Portraying a Positive Image

When speaking to the media, a person’s body language can convey just as much as the words he or she is saying. The World Health Organization suggests that spokespeople employ the following nonverbal cues.

NONVERBAL CUE	HOW IT IS PERCEIVED
Excellent eye contact	honest, open, competent, caring, empathetic, sincere, dedicated, confident, knowledgeable, interested
Sitting slightly forward in chair	interested, enthusiastic, concerned, cooperative
Open hands	open, sincere
Speaking outdoors in low-wind conditions	dedicated, hardworking, involved, concerned
Hand to chest or heart	open, honest, dedicated, sincere
Erect posture	self-confident, self-controlled, assertive, determined
Lowering voice	self-assured, honest, caring

should be quick to inform the media that they are taking action and will give frequent updates as the situation unfolds, experts say.

COORDINATE MESSAGES. Work with established partner agencies and various spokespeople within your own organization to present clear and nonconflicting messages to the media. Multiple news outlets will be seeking information at the same time, so “empowering multiple officials to provide complementary information can bolster the message,” Murphy and Kerr wrote.

SPREAD YOUR MESSAGES ACROSS VARIOUS MEDIA PLATFORMS. Depending on the severity of the situation, your target audience may have access to only certain types of media. For example, with widespread power outages, populations might turn to smartphones to get information from social networks and news websites.



Japanese tsunami survivors turn to newspapers for information at a temporary shelter in Iwate prefecture in March 2011.

AGENCE FRANCE-PRESSE

Others may listen to battery-powered radios. "If you rely on one means of communication, you might not be able to get to people," Markovic told *FORUM*. So share messages with all media outlets your target audience might use.

SET THE RECORD STRAIGHT. In today's news environment, information can flood in from a variety of sources, and not all of it will be correct. Military officials must counter rumors and false reports quickly, experts warn. "Studies have shown that you have about 15 minutes in today's information environment to respond to mis- and dis-information or it becomes truth to the target audience," Murphy, a professor at the U.S. Army War College, wrote in another report, titled "The Role of Information and Communication in Disaster Response."

After

EVALUATE YOUR PLAN. Identify which parts of your communications strategy worked and which didn't, and adjust accordingly.

HIGHLIGHT YOUR ACCOMPLISHMENTS. Work with the media to tell stories of successful operations and your continued recovery efforts.

BE PREPARED FOR SCRUTINY. No matter how well your operations went, there will be public scrutiny. "Disasters provoke immediate attention from the media. Everyone has to expect an immediate microscope and be prepared to respond," Welsh told *FORUM*. □

Frequently Asked *Questions*

Public affairs officers and other officials who speak to the media should be prepared to answer a variety of questions. In addition to basic information about the disaster, journalists will want detailed information on everything from victims' names to damage estimates. The World Health Organization offers a list of 77 questions to expect, along with other preparation tips, in its *Effective Media Communication During Public Health Emergencies* field guide (to download the field guide, go to www.who.int/csr/resources/publications/WHO_CDS_2005_31/en). Here are the highlights from that list:

- Why did this happen?
- Did you have any forewarning?
- What can we expect next?
- What is the worst-case scenario?
- Could this have been avoided?
- Who is to blame?
- How much will all this cost?
- What help has been requested or offered from others?
- What lessons were learned?
- How long will it be before the situation returns to normal?

THE WAR WITHIN

As Soldiers increasingly turn their attention to disaster response, tracking and treating their mental health becomes as important as the aid they provide

FORUM STAFF

Japanese rescue workers carry the body of a tsunami victim in the devastated town of Otsuchi in March 2011.



REUTERS

KENICHI ENDO HESITATES TO TALK ABOUT IT. THE MARCH 2011 EARTHQUAKE THAT ROCKED JAPAN TOOK AWAY HIS FATHER, HIS PET, HIS CAR AND HIS ENTIRE SAVINGS.

"To be honest, I really feel like breaking down and crying," Endo told Agence France-Presse in April 2011 from a shelter in Onagawa, Japan. "I've lost everything. But everyone here is the same. If I cry, everyone else will, so I can't."

Soldiers encounter the indescribable grief suffered by civilians like Endo every time they respond to a natural disaster. While Endo and others like him eventually leave shelters and go on to rebuild their homes and lives, Soldiers who consistently provide relief on the front lines of such tragedies often experience the devastation for prolonged periods of time. Constant contact with such devastation is not only physically draining but can also take an emotional toll.

Military leaders acknowledge the turning tides and new challenges today's Soldiers face that require a broader set of skills. Soldiers must be able to cope with a different kind of mental strain.

"We enlisted to fight an enemy," Maj. Gen. Timothy Keating, New Zealand's Army chief, told *FORUM*, referring to senior officers. "Soldiers we are recruiting these days understand a different kind of war."

One day a Soldier could be providing aid to earthquake victims in a neighboring country, and the next he might be pulling his own people out of flooded homes on the very streets where he grew up.

"I don't think the expectation is there that I'm just joining the Army to fight combat," Keating said. "That battlefield is full now of women and children who are innocent."

EARLY INDICATIONS OF STRESS

Experiencing a period of "acute stress disorder" is common during the first few weeks after a traumatic event, said Ritsuko Nishimae, a clinical psychologist who worked with Doctors Without Borders in Minamisanriku, Japan, after the March 2011 earthquake and tsunami there. "If they are not able to get proper support

psychologically, there is an increased possibility that they could develop post-traumatic stress disorder (PTSD)," Nishimae told Agence France-Presse.

Clinical scientists also use acute stress disorder as an indicator of the more serious PTSD. Unlike PTSD, acute stress disorder (ASD) typically involves feelings such as not knowing where you are or having an out-of-body experience, and ASD usually subsides within a month, according to the National Center for PTSD. Although not everyone with ASD goes on to develop PTSD, research suggests that more than 80 percent of people with ASD do develop PTSD six months later, according to National Center for PTSD statistics.

Up to 57.3 percent of natural disaster survivors in Asia suffered from PTSD, according to a 2008 study by Thai Professor Pichet Udomrattan on the mental health and psychosocial consequences of natural disasters in Asia, as reported by IPS News. Some 10 to 20 percent of rescue workers directly exposed to disasters developed the disorder, IPS News reported.

"First responders are exposed to highly stressful events in the course of their routine duties," according to the Trauma Center at the Justice Resource Institute, a U.S.-based, nongovernmental organization that describes itself as an internationally recognized leader on psychological trauma. Specific situations increase one's vulnerability to traumatic stress, such as having no control over the volume of calls (see sidebar).

The anxiety of such scenarios can lead to PTSD, which may develop among people who experience, witness or respond to mass tragedies such as earthquakes, floods and tsunamis. Depending on the severity of the trauma, PTSD among survivors can be as high as 50 percent up to a year after the incident, according to the blog Healthymagination.com.



“One day a Soldier could be providing aid to earthquake victims in a neighboring country, and the next he might be pulling his own people out of flooded homes on the very streets where he grew up.”

SITUATIONS THAT IMPACT

A FIRST RESPONDER'S MENTAL HEALTH:

- Having no control over the volume of calls for help
- Having to continue responding to calls for help even after an especially disturbing call
- Being in the service for a long time, since stress is cumulative
- Being in a situation where one feels helpless in the face of overwhelming demands, such as a prolonged, failed rescue attempt
- Having a partner or a peer killed or seriously injured in the line of duty
- The suicide of a peer; witnessing horrifying things; experiencing the death of a child in the line of duty; responding to a call for a victim who is known to the responder
- Working without the support of administration, or having administration question one's actions in an investigation

A Japan Ground Self Defense Force Soldier appears overwhelmed while conducting a search operation after the March 2011 earthquake that triggered a tsunami in Japan's Miyagi prefecture.

Source: Trauma Center

VIRTUAL COMBAT GAME HELPS TREAT STRESS DISORDER

AGENCE FRANCE-PRESSE

U.S. doctors are treating Soldiers suffering from post-traumatic stress disorder (PTSD) by plunging them back into combat, using a virtual-reality game that simulates battle scenes from Iraq and Afghanistan.

The therapeutic game, called "Virtual Iraq" or "Virtual Afghanistan," was developed from the Xbox game "Full Spectrum Warrior," a combat tactical simulation game launched with funding from the U.S. Army.

The game uses images delivered via a head-mounted display panel to plunge Soldiers back into combat zones in Iraq or Afghanistan and re-create the traumatic experiences they had while at war, said the project's lead researcher, Albert Rizzo of the University of Southern California.

"At first blush, it seems counterintuitive: Why would you make somebody go through an approach where one of your goals is to make the patient feel a little bit anxious as they revisit their traumatic experiences?" Rizzo told reporters in January 2011.

But researchers have found that by progressively raising a patient's feelings of anxiety up to a moderate level, while simultaneously encouraging the patient to mentally process and talk about the traumatic experience, they can bring down anxiety levels and decrease PTSD symptoms.

Those symptoms include recurring nightmares and flashbacks, emotional numbing, avoidance of places that stir memories, and manifestations such as hyper-vigilance, which can be a protective mechanism in a wartime setting but is often disruptive when the Soldier returns to civilian life.

The game uses visual, audio and even smell stimuli to realistically recreate what the Soldiers would have experienced in Iraq and Afghanistan.

A sensor on the head-mounted monitor causes graphics to update each time the Soldier turns his or her head, giving the illusion of being immersed in the environment.

The sound of a Humvee armored vehicle motor comes through as vibrations and virtual bomb explosions are felt in the distance. A smell machine pumps out scents reminiscent of Iraq or Afghanistan — gunpowder, diesel fuel, burning rubber or spices.

Previously, therapists had to walk patients "through in imagination the things they're fearful of or have been traumatized by," said Rizzo.

But that had its inherent pitfalls, including that therapists had to trust that the patient was genuinely visualizing the situation.

"But some people aren't good at visualizing, and we know that one of the symptoms of PTSD is avoidance," said Rizzo.

Virtual-reality therapy could also remove some of the stigma from seeking treatment for PTSD because the generation of Soldiers fighting in Iraq and Afghanistan grew up playing video games and might be more open to seeking care for the mental disorder if it's delivered in a video game package.

An estimated 20 to 30 percent of Soldiers who have fought in Iraq or Afghanistan come home with PTSD, according to the U.S. military.

PTSD has been linked to a rise in the suicide rate among veterans. Suicide claimed the lives of a record 309 U.S. service members in 2010, up from 267 in 2008, according to Pentagon numbers.

Three randomized control trials of the virtual-reality therapy games are currently under way, and a couple of other studies are testing the simulation game to see whether it can be used as a tool to assess whether Soldiers returning from war have PTSD.

In yet another study, 16 of 20 Soldiers who were treated with the simulator game, developed by Rizzo and others at the University of Southern California's Institute for Creative Technology, no longer met PTSD criteria at the end of therapy.

Like physical wounds, mental wounds need treatment, too. A technique called Psychological First Aid (PFA) is gaining popularity among mental health professionals as a way to help people manage stress after a disaster. According to Healthymagination.com, PFA seeks to establish a human connection in an unobtrusive, culturally sensitive manner; make survivors feel safe and secure both physically and emotionally; help survivors identify their immediate needs; connect people to social networks; provide information that can help victims reduce stress reactions; encourage coping behaviors.

Overcoming the trauma brought on by tragedy is best done with help from others, experts suggest.

"It is difficult to recover in isolation; the ability to accept support and help is essential to healing," according to the Trauma Center. "People are sometimes able to recover from acute stress disorder using their own coping skills and support from friends and family." However, "if a month has passed since the event and the first responder is still experiencing significant distress, this may signal PTSD."

A GROWING PROBLEM

The World Health Organization (WHO) expects mental problems to increase in Western Pacific countries as natural and man-made disasters in the region continue to wreak havoc, the Philippines' GMA News reported in October 2011.

"We expect a significant increase in mental health problems among the most vulnerable populations such as the elderly, children and people with disabilities," Dr. Wang Xiangdong, the regional advisor and team leader for mental health and injury prevention in the WHO-Western Pacific, told GMA News. "Certainly, there will be an increase in mental health problems such as PTSD and depression as the affected populations in the Western Pacific Region adjust to the aftermath of flooding, earthquake, tsunami and radiation."

Wang stressed the importance of not just treating the general public but also first responders and disaster workers, such as military personnel. He also



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U.S. Army Staff Sgt. Jeff Ebert wears a virtual-reality headset and holds a video-game controller as he demonstrates a virtual-reality computer simulation at Madigan Army Medical Center at Fort Lewis, Washington.

A U.S. Soldier demonstrates the use of a program for tablet computers and smartphones that is designed to help calm symptoms of post-traumatic stress disorder and traumatic brain injury.

asked news agencies to consider the impact on a community's mental health before repeatedly publishing graphic images of a destroyed community, according to GMA News.

Roughly 100 million people in the Western Pacific region suffer from some form of mental disorder, according to WHO calculations. "Surveys estimated that at least 2 percent of the population (of a country or territory) suffer from the most severe forms of mental disorders, including schizophrenia, dementia, severe mental retardation and the consequences of brain injuries," according to a WHO report on mental health, GMA News reported.

Growing attention to these issues has others calling on government leaders to give more attention to the importance of treating mental health disorders as they relate to disasters.

"Every country in the world should have disaster plans in dealing with the mental health of individuals," William Yule, professor emeritus of applied child psychology at King's College in London, told IPS News in January 2010.

It's important to promote a culture of directly addressing mental health issues and to remove their stigma, experts say. Just like natural disasters, mental issues such as PTSD have the potential to affect everyone. "We're much more alike than we are different," Dr. Atle Dyregrov, director of the Center for Crisis Psychology in Norway, told ISP News. "This is true even in times of disasters." □

The PTSD Test

Mental health professionals can usually diagnose someone with post-traumatic stress disorder (PTSD) after one or two sessions. The evaluation may consist of questioning you about recent traumatic events as well as having your spouse answer questions. Review this screening test provided by the National Center for PTSD and answer the questions honestly. If you respond affirmatively to any of them, experts recommend you seek more information from a mental health care provider to find out for sure whether you're experiencing symptoms of PTSD.

PTSD SCREEN:

In your life, have you ever had any experience that was so frightening, horrible or upsetting that, in the past month, you:

- Have had nightmares about the experience or thought about it when you did not want to?
- Tried hard not to think about the experience or avoided situations that reminded you of it?
- Were constantly on guard, watchful or easily startled?
- Felt numb or detached from others, activities or your surroundings?

Simply answering "yes" to any of the questions doesn't mean you have PTSD. Only a qualified mental health care practitioner, such as a clinician or psychologist, can diagnose you with PTSD.

Find more resources from the National Center for PTSD by visiting www.ptsd.va.gov/public.

A mobile application the "PTSD Coach" is available for download from iTunes and on the Android Market. The cellphone program also provides a screening test and gives tips on coping with stressful situations.

Source: National Center for PTSD



AGENCE FRANCE-PRESSE



Indonesian President Susilo Bambang Yudhoyono, third from left, inspects Special Forces Command (Kopassus) Soldiers during the 66th anniversary ceremony for the Indonesian armed forces in Jakarta on October 5, 2011.

QUESTION Q&A ANSWER

FORUM interviews Rear Adm. Iskandar Sitompul, chief military spokesman of the Indonesian National Armed Forces, or Tentara Nasional Indonesia (TNI)

Q Why is coordination so challenging when disaster strikes?

A A serious issue in the ASEAN [Association of Southeast Asian Nations] region concerns the frequency with which disasters strike. We all know that our region is highly prone to disasters. One example is the earthquake and tsunami that struck northeastern Japan a few months ago, claiming thousands of lives and destroying property and infrastructure. In another, we can still recall in vivid detail when [in 2004], Aceh was hit by a gigantic tsunami that similarly left hundreds of thousands dead amid a vast trail of devastation. In my opinion, there are two key aspects of disaster relief that call for our attention.

First, we need to build regional capacity and coordination, using the newly established AHA Center [ASEAN Coordinating Center for Humanitarian Assistance in Disaster Management]. Second, we need to hold joint exercises on disaster relief, such as in ARF-DIREX [ASEAN Regional Forum Disaster Relief Exercise] in Manado, Indonesia, in March 2011, co-chaired by Indonesia and Japan.

The prerequisites for successful emergency responses to disasters include leadership and coordination. If leadership and coordination are absent or weak, the result will be confusion, breakdown, losses and catastrophic failure. This leadership and coordination should naturally be provided by the authorities (government) with participation from the public. In a disaster situation, successful participation from all elements of society depends to a great extent on leadership and coordination. Those involved in leadership and coordination of emergency responses to disasters must have the ability to make quick, appropriate and bold decisions; stand resolute; and operate a system of instructions and not discussion.

The work of disaster management is a tough job, as no one has the ability to put in place all the preparations necessary for work of such an unpredictable nature. Even so, it is far better to make preparations than to have none at all. Therefore, if we want to be a society that always has the readiness to deal with the challenges of a disaster, we should keep learning from the many disasters that have occurred.

Q What do you think about the AHA Center as a coordinating body for disaster relief in the region?

A The AHA Center is now officially operating in Indonesia. The ASEAN heads of state agreed that the AHA Center could operate in Indonesia in 2011.

The AHA Center was founded for the purpose of facilitating cooperation and coordination between ASEAN members and the United Nations and other international organizations in order to promote regional collaboration in disaster management.

The AHA Center offers many benefits for ASEAN nations, as it is envisaged to provide appropriate, timely and accurate information for disaster-hit ASEAN countries. In Indonesia, it can also strengthen the disaster management institutional framework in tandem with acting as a center for the development of disaster-related human, scientific and technological resources. Therefore, our hope is that with the AHA Center coming into operation, Indonesia will develop stronger capacity and capability in disaster management.

The functions of the AHA Center can be classified into five main areas: first, as an ASEAN disaster information center; second, as a center for mobilizing aid for ASEAN nations if required, including assets, equipment, material, funds and human resources; third, as a coordinating center for operations, including the facilitation of joint emergency responses; fourth, as a center for administrative coordination to facilitate processes for transit of personnel, equipment, materials and other needs related to the provision of aid; and fifth, as a center for coordination of knowledge and research about disasters in ASEAN and to facilitate technical cooperation and research related to disasters.

Q What lessons were learned from the ARF-DIREX held in March 2011? What is key for facilitating military and civilian cooperation in the face of disaster?

A Disaster management is a complex and multidimensional undertaking. It not only requires cooperation and coordination but also involves logistics, resources, mobilization, command and control, and the handling of the disasters themselves.

The lessons learned from this disaster exercise are about how to bring procedures into alignment and develop a common position when natural disaster strikes a nation. An added lesson concerns how to manage aid provided by other nations, to maintain a consistent progression in aid operations.

Accordingly, the benefits of the exercise were at the national level, testing or preparation of a disaster management system involving foreign assistance in Indonesia, while improving mechanisms for interagency coordination and cooperation under the control of the National Disaster Management Agency; at the regional

level, strategic input and recommendations for ARF cooperation in disaster management in the region; and at the operational level, facilitation for harmonization of various national, regional and international protocols in disaster management.

Q Do you think partnerships are important for security in the region? And how so?

A As part of ASEAN, Indonesia stretches across a strategic and dynamic region within East Asia. To maintain its centrality within the region and raise its standing as an organization of importance on the global stage, ASEAN clearly needs to become more integrated and more involved with global economic, defense and security concerns by responding more proactively to changes in the increasingly interconnected international environment.

ASEAN must be able to build and maintain regional stability and security. The stability and security of the region can also be understood as the integration of ASEAN strength brought about by fostering the integration of politics, defense and security in the ASEAN region. Accordingly, the ASEAN Political Security Community can be used as a legitimate pillar to build a regional security and defense community (in the level and progression that is required) and cooperation in maritime security and various issues in regional defense and security.

To this end, ASEAN needs to build a more robust presence through deepening and widening. Deepening focuses more on internal improvements, such as the strengthening of dispute resolution mechanisms for greater effectiveness in comparison to the existing mechanisms in operation. Widening, on the other hand, refers in a general sense to ASEAN's efforts to expand its membership, acquire a greater role for its organization and widen the scope of the issues it handles.

Q What role would you like to see ASEAN play in the future?

A Since it was founded, ASEAN has paved the way for the creation of peace and stability in the region, enabling member nations to pursue development and achieve prosperity.

Indonesia held the chairmanship of ASEAN in 2011. Previously, Indonesia had demonstrated leadership when appointed the chair of ASEAN in 2003. At that time, Indonesia convinced other ASEAN members of the steps that would need to be taken to lift cooperation to a higher level. ASEAN then adopted the Bali Concord II, envisioning an ASEAN Community set upon three pillars, namely political and security cooperation, economic cooperation, and socio-cultural cooperation, for the purpose of ensuring durable peace, stability and shared prosperity in the region.



TNI Rear Adm. Iskandar Sitompul and Col. Minulyo Suprapto evaluate *Asia Pacific Defense FORUM* during an interview at TNI headquarters outside Jakarta, Indonesia, in March 2011.

As part of this association of nations in Southeast Asia, Indonesia has many important roles. One recent example was the grand event of the ASEAN Summit. The 18th ASEAN Summit, convened in Jakarta on May 7-8, 2011, received attention far and wide within the international community, well beyond Southeast Asia. ASEAN is now becoming a new axis for advanced nations, most importantly the United States and the European Union.

Q What are some of TNI's greatest successes in recent years?

A In recent years and particularly since 2010, TNI has successfully carried out a range of duties and activities in areas such as strength building, use of force and cooperation with other countries in the region.

Under the strength-building program, the TNI headquarters have revamped their organization, and the TNI structure is moving toward fulfilling a minimum essential force [MEF].

Concerning use of force, in recent years, TNI freed the Sinar Kudus vessel from pirates operating in Somalian waters. The TNI engages in regular security cooperation along the land and maritime borders between Indonesia and neighboring countries, such as Malaysia, Timor-Leste, Papua New Guinea, Australia and the Philippines.

The TNI also cooperates with government ministries, statutory institutions and regional governments. Examples of this include housing construction in border areas, aid for disaster victims and rehabilitation of homes no longer fit for habitation, assistance in the 1 billion tree planting program, assistance in pollution control, assistance in revitalizing the family planning program, joint training with the National Disaster Management Agency, and efforts to boost development in the regions.

Similarly, the peacekeeping operations carried out by the peacekeeping missions unit (the Garuda Contingent)



Indonesian Special Forces, or Kopassus, attack a mock terrorist during a joint anti-terrorism drill with Australia's elite Special Air Service unit at the Bali International Airport in Kuta, Indonesia.

have won acclaim with appreciation expressed by troops from the U.N. and the host nations. The appreciation is partly in response to TNI's considerable work in civic and social operations, including the construction of urban and rural roads and repairs to clean water utilities and other public infrastructure. Looking forward, we envision further improvements in these operations with the construction of a command and training facility for peacekeeping troops in Bogor.

In our international cooperation, we work with Singapore, Malaysia, the Philippines, Timor-Leste, Thailand, Australia, India, the United States and other friendly nations. Through these many different activities, TNI has succeeded in creating a conducive and stable security situation.

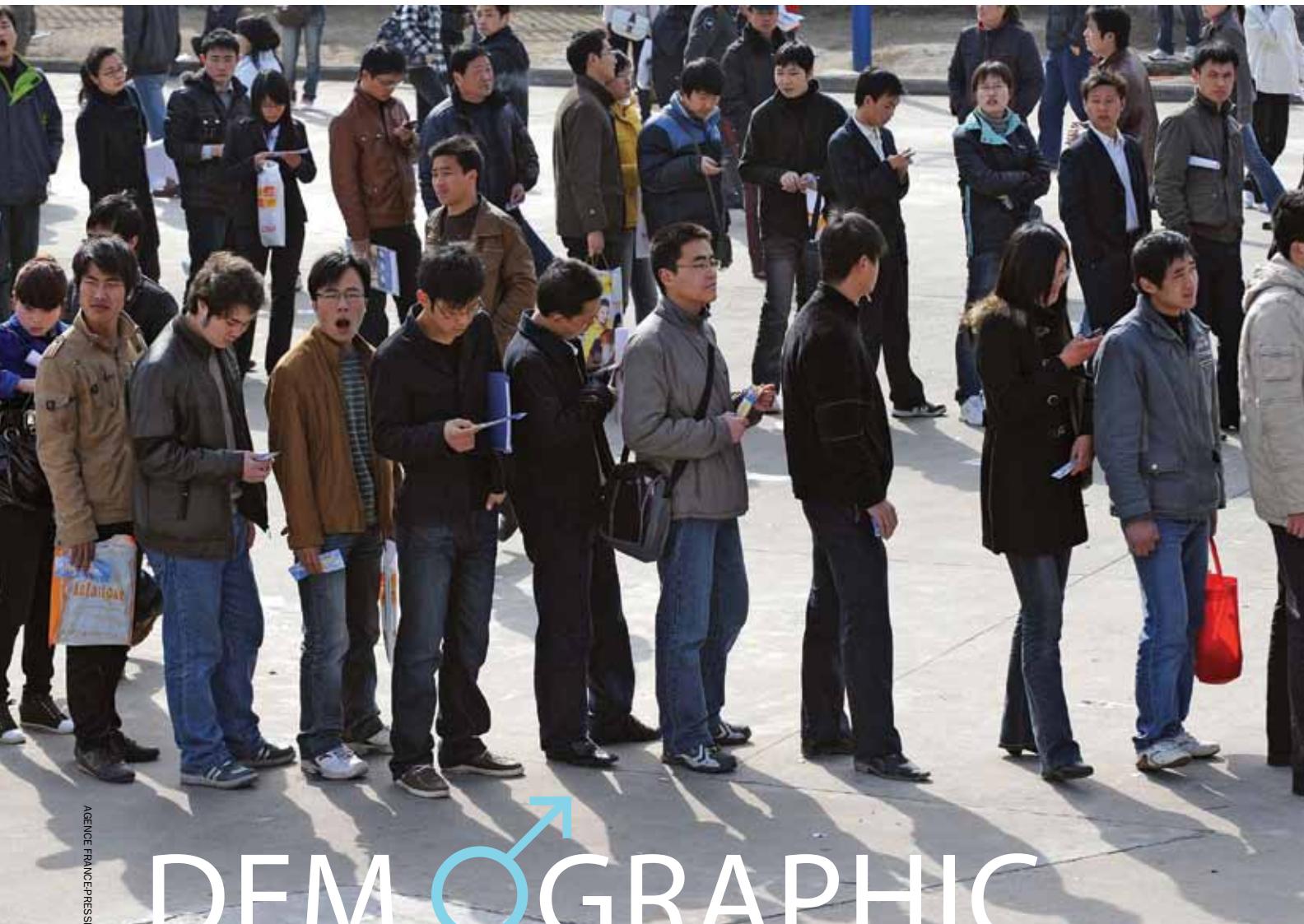
Q What about regional cooperation? What barriers stand in the way of better cooperation with neighboring nations?

A The military cooperation between TNI and the armed forces of other Southeast Asian nations will be strengthened further, given the effectiveness of this cooperation in curbing security threats in the region.

Of paramount importance, we have strengthened these close relations through regular joint exercises, such as Malindo, Indopura, Cobra Gold and so on. This is not only to maintain cordial relations but, more importantly, to bring them to a higher plane.

As a country "occupying" two-thirds of the Southeast Asia region, Indonesia has a critical interest in the management of regional security. Moreover, from a perspective of ideals, Indonesia has a greater stake compared with other Southeast Asian nations in structuring the peace and stability of Southeast Asia.

Intrastate conflict poses a latent threat to Indonesia's existence as a nation state. Lingering interstate conflicts continue to hinder the development of amicable relations among ASEAN nations. On the other hand, the threat of terrorism that has wreaked havoc for the stability and security of Indonesia and the region is inextricably linked to the present, albeit temporary, agenda of powers from outside the region. □



DEMOGRAPHIC + DANGERS

Imbalances in the youth population present challenges for nations

FORUM STAFF

Yang Hongwei is an ant. Not in body but in spirit. Each morning, the hardworking college graduate joins a swarm of others like him who suffer the crowded bus ride from his low-income neighborhood to the heart of Beijing. There, he oils the day away in his low-wage job, then joins the stream of recent grads making their way back to cramped quarters.



Young college graduates line up outside a job fair in China's Anhui province. Young people often flock to big cities in search of employment, but if the jobs aren't there, desperation can lead to problems, experts warn.

"I hope I can leave soon; the sooner the better, but that needs money," he told the IPS News Agency in a 2010 interview. Originally from Heilongjiang province in China's northeastern tip, Yang gave himself three more years in the big city to work his way into a job that could provide him a better life. "If I can't improve my situation, I will return to my hometown."

Dubbed "ant tribes" in a book by the same name by political scientist Lian Si, clusters of frustrated young people such as Yang can be found scattered throughout China's big cities. They migrate to urban areas from their rural villages, hoping to find good jobs that will allow them to start families. More often, they find disappointment.

This scenario, which plays out not just in China but across the Asia Pacific, can present a challenge for governments and security forces, experts say. Countries that find themselves unprepared for a bulge in the urban youth population experience a strain on their infrastructure and resources. Lack of jobs and educational opportunities can lead to frustration, and young people living in squalor may turn to criminal enterprises and extremist activities to survive, researchers say.

"In many developing countries, urban centers offer better social and economic



A young job seeker in Shanghai lets his sign do the begging for him.

opportunities for young people than rural areas do," according to a policy research working paper from the World Bank. "But if governments fail to provide opportunities and services to a growing urban population, increased grievances may arise, fueling protest and possibly also political violence. A particular security concern has been that disenfranchised and economically and socially excluded urban youth may engage in violent activities, whether 'criminal' or 'political.' "

In countries with explosive youth populations and few employment options, desperate job seekers also look beyond their borders in search of opportunity. For those who can't afford to migrate legally, illicit traffickers provide a way out. Young workers flow through the same routes that are used to smuggle arms and drugs across the region, experts say.

That type of migration "creates a lot of transnational problems," Miemie Byrd, associate professor at the Asia-Pacific Center for Security Studies, told *FORUM*. "They become exploited; they become vulnerable, because they are doing it illegally."

Making it work

Despite the challenges that arise with expanding urban youth populations, countries can benefit from a bulge. From 1965 to 1990, for example, the Asian "Tigers" (Hong Kong, Singapore, South Korea and Taiwan) experienced an economic boom due in part to rapid growth in the young working population, according to *Finance & Development*, a magazine published by the International Monetary Fund. The Tigers' attention to education systems, job creation and trade policies helped these countries capitalize on their large youth demographic.

"It goes back to good governance," explained Byrd, who has studied youth unemployment. "If the government is not able to capitalize on it and come up with effective policies to create jobs and provide livelihoods and opportunities for these young people — specifically young men — then it could turn from an opportunity into a nightmare."

A perilous gap

The nightmare of too many disenfranchised young men has been exacerbated in some



Young college
graduates crowd a
job fair in China's
Jiangsu province.

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Chinese Soldiers meet young women at a matchmaking fair in Beijing in June 2011. The government has launched measures to narrow the gap between its male and female population.

places by the decline in the number of young women. In cultures that favor boys over girls, such as those dominant in China and India, female infanticide and sex-selective abortions have led to gender imbalances with serious implications, experts contend.

Societies with pronounced gaps between the male and female populations “breed chronic violence and persistent social disorder and corruption,” Valerie M. Hudson and Andrea M. den Boer wrote in the book *Bare Branches: The Security Implications of Asia’s Surplus Male Population*. Large groups of young men with few job and family options turn to drug and arms trafficking, kidnapping, sex trafficking and organized crime to support themselves, researchers say. Dissatisfaction with living and working conditions can also lead to disruptive protests and demonstrations.

To address immediate concerns about the surplus men, countries should work to improve their economic outlook, experts suggest. Large infrastructure projects that provide jobs and social insurance programs for the unemployed are two options, Hudson and den Boer wrote.

The overarching concern, though, is the need for more women, experts say. To that end, both China and India have banned sex-selective abortions, and public education campaigns strive to change the cultural stigma of having female children. Governments and nongovernmental

groups have implemented incentive programs to encourage families to value girls.

Raising the status of women and balancing the gender pools are important for the stability of such societies, experts say. “To understand gender imbalance, think of society as a bird with two wings. We cannot have one wing be much smaller and far less developed if we want the bird to take flight and reach great heights,” Vasu Mohan, deputy director for Europe and Asia for the International Foundation for Electoral Systems, told *FORUM*.

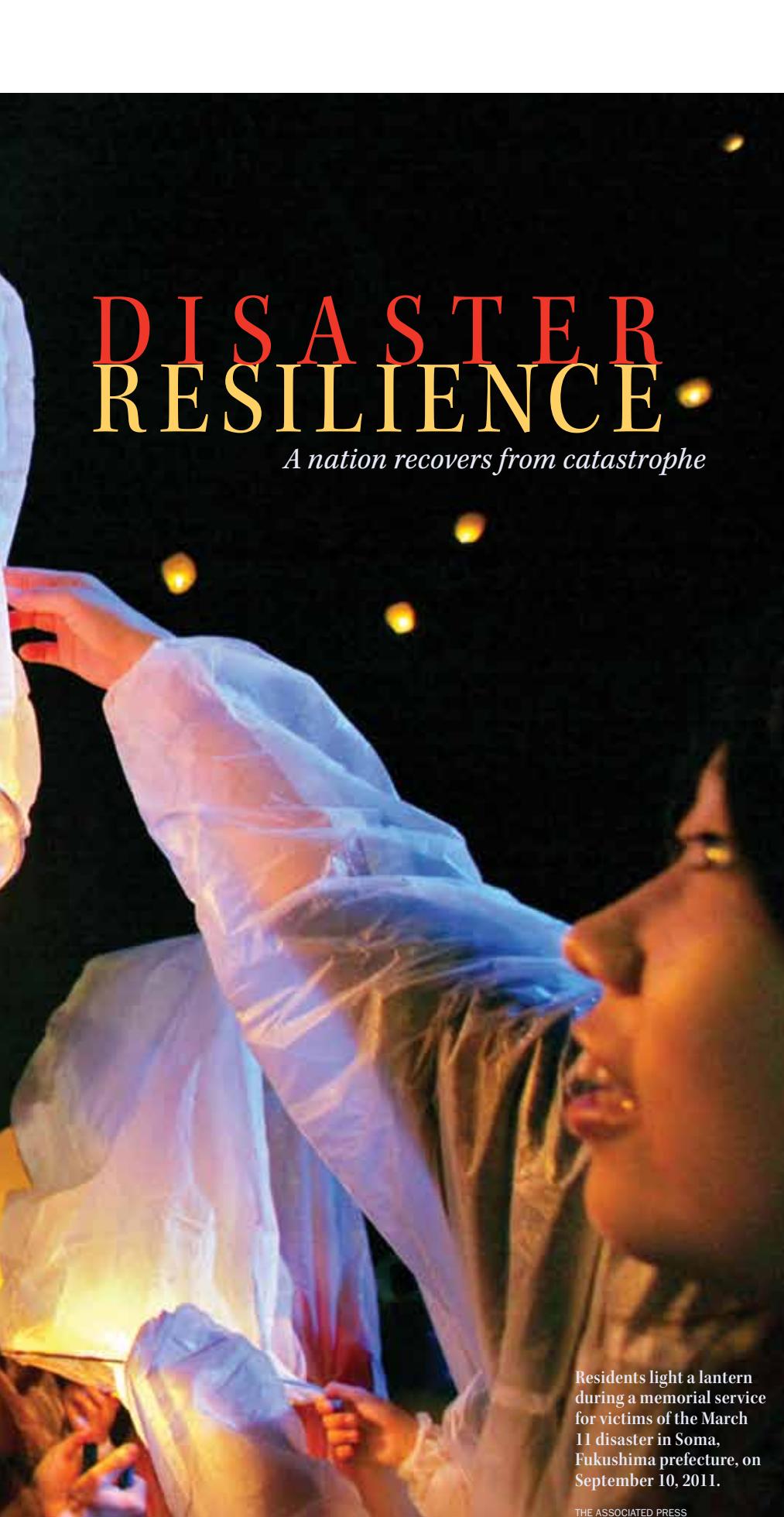
A big disaster”

Back in the “ant tribes” of Beijing, many young workers dream of starting a family, but more than 90 percent are single, political scientist Lian estimated in his book. For Yang, the young worker from Heilongjiang province, financial hardships leave him unable to even begin wooing a young woman. “How dare I date a girl? That costs,” Yang told IPS.

As frustration among the youth mounts in crowded urban centers throughout Asia, experts grow more concerned.

“Ants are smart,” Lian told *The Christian Science Monitor* newspaper. “They are relatively weak individually, but if you don’t pay attention to them, they can cause a big disaster. There is a Chinese saying that a 10,000 mile dam can be breached by a swarm of ants.” □



A close-up photograph of a woman's face, partially obscured by a translucent white cloth or paper. She is looking upwards and to the right, her expression somber. In her hands, she holds a small, glowing orange lantern. Several other lanterns are visible in the background, creating a warm, glowing atmosphere against a dark sky.

FORUM STAFF

DISASTER RESILIENCE

A nation recovers from catastrophe

Residents light a lantern during a memorial service for victims of the March 11 disaster in Soma, Fukushima prefecture, on September 10, 2011.

THE ASSOCIATED PRESS

On March 11, 2011, a massive earthquake and tsunami wreaked havoc on Japan's northeast coast. The powerful shaking and flooding caused hundreds of billions of dollars' worth of damage, left more than 21,000 people dead or missing, and forever changed the lives of millions more.

In this photo essay, photographers reveal the extent of the devastation caused by the waves that surged to more than 40 meters high and the resolve of a nation to return to normalcy. Once the search for survivors ended, members of the government and military, residents, foreign military and relief workers pulled together to overcome tough challenges. Together, they quickly regained control of damaged nuclear power plants and started removing the estimated 25 million tons of rubble.

Countries heal in their own ways. Although the impact of the disaster will linger for some time, green grass and new construction have already replaced many of the mountains of debris. Planes and ships come and go from ports the tsunami turned ghostly that devastating day last March. Cars once again travel roads that had been rendered impassable by rubble. Commuters and schoolchildren prepare anew for the next big quake.

Images taken immediately after the cataclysmic event and during the months since reveal how far Japan has come. Given the remarkable pace at which Japan cleaned up and started to rebuild, other countries might learn not only from the nation's culture of preparedness and process of recovery but also from its resiliency.

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SEPTEMBER 1, 2011



1. The disaster zone in Kesennuma, Miyagi prefecture, on June 18, 2011.

2. A road in Iwaki, Fukushima prefecture, on March 11, 2011, and on September 1.

3. A U.S. Soldier clears debris from the train tracks at Rikuzen-ono Station in Higashi-Matsushima, Miyagi prefecture, on April 24, 2011.

4. A lone tree survived the March 11 quake and tsunami in Rikuzentakata, Iwate prefecture. Dubbed the "pine of hope," the tree, photographed on August 15, 2011, attracted visitors in the aftermath.

5. Police from Miyagi prefecture conduct a search in Yamamoto-cho in September 2011. In disaster situations, cooperation among law enforcement, the military, government agencies and nonprofit groups is essential, experts say.

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MARCH 15, 2011



JUNE 4, 2011



SEPTEMBER 1, 2011



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5 APRIL 6, 2011



JUNE 3, 2011



REUTERS

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1. Debris covered an expanse in Ishinomaki, Miyagi prefecture, on March 15, 2011. Cleanup crews had cleared the larger rubble by June 4. Grass reclaimed the land by September 1, fewer than six months after the tsunami struck.

2. Students from Oya Primary School in Miyagi prefecture harvest rice in October 2011 in paddies that had been covered with debris just months earlier.

3. A worker walks near the 4,724-ton Asia Symphony freighter on August 24, 2011. The tsunami pushed the freighter onto the harbor wall in Kamaishi port, but months of repairs will allow the vessel to return to sea.

4. Wakana Kumagai, 6, stands near her mother and brother on September 11, 2011, as they visit the spot where their house used to stand in Higashi-Matsushima, Miyagi prefecture. The tsunami killed her father, Kazuyuki.

5. The tsunami floods parked a sightseeing boat atop a two-story inn in Otsuchi, Iwate prefecture, in northeastern Japan, as photographed on April 6, 2011. By June 3, residents had removed the craft.

6. Japanese elementary schoolchildren wear fireproof hoods on September 1, 2011, during the first national earthquake drill since the March 2011 disaster.



AGENCE FRANCE-PRESSE

Khaan Quest 2011

EXERCISE PROVES KEY FOR MONGOLIA AND REGION

STORY AND PHOTOS BY COL. G. NYAMDORJ/
EDITOR IN CHIEF OF THE MONGOLIAN ARMED FORCES
NEWSPAPER SOYOMBO

In The Mongolian Armed Forces (MAF) "have been achieving overseas missions under the U.N. flag honorably," said Lt. Gen. Ts. Byambajav, MAF chief of general staff, during the opening ceremonies of the Khaan Quest 2011 Multinational Peace Support Operations Exercise on July 31, 2011, at the Five Hills Training Area in Mongolia. "We are going to try and expand our mission. In the future, we are aiming to expand our participation for the peace mission."



President and Commander in Chief of the Armed Forces Ts. Elbegdorj expressed his deep appreciation for "the expertise, the use of quality training and the personnel who are participating in the exercise."

"The importance of these methods [is increasing] year by year, and now [it] is becoming a very important exercise for the region," Elbegdorj said. Minister of Defense L. Bold and other dignitaries from other nations also attended.

"I would like to begin by thanking the Mongolian government and the Armed Forces for their generous hospitality and, once again, welcoming us here to their beautiful country," said Lt. Gen. Kenneth J. Glueck Jr., commanding general of III Marine Expeditionary Force

and commander of U.S. Marine Corps Bases Japan. "Khaan Quest has become the world's pre-eminent peacekeeping exercise. We have learned that we can maintain security more effectively when we pursue it as partners working in conjunction with like-minded countries with mutual interest[s]."

Exercise Khaan Quest 2011 involved 16 countries with more than 1,000 personnel. Since 2003, the MAF and the U.S. Pacific Command have conducted the Khaan Quest exercise at the Five Hills Training Area together. It quickly evolved into a prominent, international peace-support operations exercise. The operation includes a command post exercise (CPX), field tactical exercise (FTX), and engineering civic action programs and



U.S. and Mongolian Soldiers hold up the Mongolian flag after completing Khaan Quest 2011, which helped the local population with engineering and medical projects.

medical civic action programs.

The United States, South Korea, Indonesia, Cambodia, India and Mongolia participated in the tactical exercise. The FTX improves the small unit capabilities and promotes cohesion and achievement of tasks. Multinational military personnel were introduced to different weapons systems and tactics and participated in seven training lanes during the FTX. Multinational personnel learned how to fulfill their duty during the U.N. peace support missions. Participants enjoyed exchanging duty and cultural experiences during the exercise.

"We came from the infantry unit located close to New Delhi, capital city of India," said Indian platoon

commander Lt. Col. Aakash Khazanchi. "Participating in Khaan Quest 2011 multinational peace support operations exercise in Mongolia is very helpful to improve our personnel ability and develop mission experience before we deploy in support of the U.N. mission in Southern Sudan in six months."

The CPX supports the Mongolian Defense Renew policy, which prepares the battalion-size unit for operations. The Khaan Quest 2011 expanded the CPX with the use of Marine KC-130 aircraft. The exercise planners also increased the FTX to include more real-world environments and scenarios that could happen during peace support operations, according to Marine Col. Steve Merrill, U.S. exercise director.

Continued on page 56

Addressing “Ungoverned Spaces”

ASIA-PACIFIC CENTER FOR SECURITY STUDIES PUBLIC AFFAIRS

The Comprehensive Security Responses to Terrorism (CSRT) “mini-course” for continued engagement, education and connections addressed “ungoverned spaces.” The Mongolian Chapter of the Asia-Pacific Center for Security Studies (APCSS) Alumni Association in partnership with the Mongolian Institute for Strategic Studies and the George C. Marshall European Center for Security Studies co-hosted the workshop in September 2011.

“It was a special event for us, not only the entire APCSS alumni here in Mongolia,” explained Col. Munkh-Ochir Dorjudger, a member of the Mongolian APCSS Alumni Association. “This year, we celebrate the centennial of our independence. This is something that is dear to the heart of every Mongolian. I would say we were able to look at the transnational security issues not from a narrow subregional perspective, rather from a bi-subregional or bi-regional perspective. It’s in line with our foreign and very much in line with our regional policy. We are really lucky this time to bring expertise, knowledge and sharing of common concerns from both subregions here in Ulaanbaatar.”

Drawing from APCSS CSRT course material and additional adjunct presentations, the course identified commonalities in security challenges among the participants through a broadened understanding of each nation’s and subregion’s issues related to the theme of “ungoverned spaces.”

In addition, the curriculum enhanced knowledge on the

probabilities, vulnerabilities and impacts of the physical and virtual security environment. The course also enabled discussion and collaboration on regional and collective approaches to diminish, mitigate and defeat these security challenges. Finally, participants were empowered with collaborative tools to continue developing and nurturing networks through alumni engagement activities.

“The most valuable thing about this workshop was to be able to talk openly about some very sensitive issues, namely the historically significant and sensitive issues between China, Korea and Japan,” explained a workshop participant from Japan. “Now, we are standing on the same starting line with the same perspectives to move forward to the future together.”

In the past decade, the first of this millennium, globalization and technology have been a driving force in the convergence of transnational threats and networks, which are more dangerous and destabilizing than ever. These threats and networks have developed the sophisticated and adaptive ability to cross borders involving elements of organized and disorganized crime and exploit weak governance structures and the spaces that are ungoverned or ungovernable, particularly through illicit finance and trafficking in drugs, arms, goods and persons. The confluence of illicit trafficking with corruption has further facilitated the necessary environment for smuggling of terrorists and weapons of mass destruction (WMD), especially WMD materials and other dangerous weapons and technologies that threaten regional

WORKING TOGETHER TO PROVIDE HUMANITARIAN AID

STORY AND PHOTO BY COL. G. NYAMDORJ/EDITOR IN CHIEF OF THE MONGOLIAN ARMED FORCES NEWSPAPER SOYOMBO



Mongolian and U.S. Soldiers renovate the sanitarium during Operation Pacific Angel-Mongolia in July 2011.

On July 18, 2011, Operation Pacific Angel-Mongolia launched on the soil of Khentii province. Officially in its fourth year, Operation Pacific Angel helps cultivate common bonds and foster good will between the United States and other regional nations by conducting multilateral humanitarian and civic assistance operations. A mission was held in Indonesia in June 2011 followed by Cambodia in August and Timor-Leste in September. Operation Pacific Angel, a joint and combined humanitarian assistance operation, was led by 13th Air Force at Joint Base Pearl Harbor-Hickam, Hawaii.

This engagement supports U.S. Pacific Command’s capacity-building efforts by partnering with other governments in the region to provide medical, dental, optometry,

and global stability and security.

"This workshop is the most effective event I've ever had in my life because we actually worked on similar conditions," said a workshop participant from Kyrgyzstan. "These recommendations are realistic and effective because our countries are facing the same problems with contemporary threats like terrorism, religious extremism, drug trafficking, human trafficking and so on. This workshop gave all the participants the unique value of a common understanding of the threats and gave us a chance to find new solutions."

Additionally, these threats have crossed into the virtual spaces of societies and economies to create new challenges in addressing the advancing vulnerability to exploitation by both the criminally motivated and the ideologically motivated.

The expansion of global interdependence continues to confront the ability of states to meet the expectations of governing the "spaces" that fall within their responsibility in both physical and virtual dimensions. Across North Asia, the need to secure these spaces against the use for illicit means is a growing challenge. The necessity of security practitioners across government and society to have a full understanding of the scope of the challenge and to identify ways for collaboration to effectively and more efficiently "raise the cost and reduce the benefit" to both criminal and terrorist actors is critical to the collective regional and global security environment. Simply, transnational security challenges today require collective security and transnational solutions to both mitigate and defeat.

veterinary and engineering assistance to their citizens. Since 2007, host nation military personnel and U.S. military members have improved the lives of tens of thousands of people through Operation Pacific Angel missions. This was the first time the exercise was hosted and held in Mongolia. About 65 U.S. military members with representatives from the Mongolian Armed Forces and local nongovernmental organizations participated, also engaging in subject-matter expert exchanges in infection control and basic life support procedures.

On July 20, 2011, U.S. Ambassador Jonathan Addleton observed military personnel conducting medical and engineering operations at the Delgerkhaan district. "I'm very glad I got the chance to visit the places where medical and engineering assistance is taking place," Addleton said. "Mongolians with American military personnel together are working very hard and making good progress. For example, military doctors are giving medical service to more than 150 people here. There are also medical doctors from Sri Lanka participating in the humanitarian assistance," he added.

The medical mobile team also went to Delgerkhaan, Jargaltkhaan and Tsenkhermandal to improve health

Alumni from the United States, Mongolia, Japan, South Korea, China, Hong Kong, Russia, Kazakhstan, Kyrgyzstan and Tajikistan attended; plus there were regional perspectives from Shanghai Cooperation Organization, South Asia Association for Regional Cooperation and a subject matter expert on Southeast Asian cooperation.

"This event was unprecedented in the participation of Counterterrorism Fellowship Program alumni and other participants from across a wide representation of perspectives and experience that contributed to an enriched, candid and respectful discussion and debate on very real and critical challenges for all our nations," said Lt. Col. Michael S. Mollohan Sr., military professor and academic lead from APCSS.

"Mongolia has been terrific," concluded retired Brig. Gen. James Hirai, APCSS acting director. "Since the APCSS was established in 1995, we've had the pleasure and honor of having nearly 150 Mongolian officials, from both the military and the civilian side of government, participate in our programs. These alumni have risen to levels of significance in the Mongolian government, to include the president of the country. We wanted to reinforce the good things Mongolians have been doing individually and collectively."



conditions of local populations. In the first two days, military doctors led by Maj. T. Naranzul worked in Tsenkhermandal and examined and treated 612 people. The medical mobile team provided health services in Delgerkhaan and then in Jargaltkhaan.

Mongolian and U.S. military engineering personnel renovated the sanitarium near Avargatoson Lake with its natural treatments. The sanitarium is useful for retired and active service personnel who have skin allergies and physical traumas. Built in 1999, the sanitarium had deteriorated year by year. The Mongolian and U.S. team successfully renovated the door, roof, electrical systems, exterior walkways and painted the walls. "We [worked] shoulder to shoulder with our colleagues [to] fulfill the project on time," Master Sgt. Tim Willis said.

Through Operation Pacific Angel-Mongolia, military veterinarians exchanged experiences and worked together to treat livestock of the herdsman living near the village Ulziit, about 60 kilometers northwest of Ondorkhaan. Mongolia and the United States decided to implement "Example Herdsman," a project to improve livestock health and reduce unexpected deaths among herds.



1. Mongolian and U.S. veterinarians treat a cow during Operation Pacific Angel. **2.** Mongolian Soldiers administer medical aid to a U.S. Marine during a combat drill at Khaan Quest 2011. **3.** Mongolian President Ts. Elbegdorj speaks at the opening ceremony for Khaan Quest 2011.

Khaan Quest 2011

PARTICIPANTS

Australia

Cambodia

Canada

China

France

Germany

India

Indonesia

Japan

Mongolia

Russia

Singapore

South Korea

United Kingdom

United States

Vietnam

Continued from page 53

Since Khaan Quest's 2003 beginning, 5,056 personnel have participated in the exercise. In 2006, it became an important multinational exercise, consisting of 16 countries, with approximately 500 personnel participating. From 2007 to 2009, the number grew to more than 1,000 personnel.

The exercise participants not only train for peacekeeping, but they also provide humanitarian and medical assistance to the people of Mongolia. The Medical Mobile Team started conducting annual military civic actions in 2004. Since then, the team has provided support to seven provinces and 18 subprovinces.

In 2011, the MAF and U.S. continued to conduct humanitarian civic assistance operations, including medical and engineering exercises. The joint medical team, which included doctors from the United States, India, South Korea, Canada and Mongolia, provided medical service for people living in the Khan-Uul district at Ulaanbaatar.

"I enjoy Mongolia," said Lt. Col. John Boston, Alaskan National Guard, 76th medical group, who was on his sixth visit. "This is the first time working with international medics. We are operating jointly, and I am very impressed with my Mongolian colleagues' skills."

The Mongolian and U.S. military engineering personnel constructed the medical facility extension at the

9th Khoroo, Khan-Uul district. "Just like we served in Afghanistan, we are working together for the humanitarian activities," Merrill said. The facility "is being built with the sweat and hard work and is going to last a long time. It looks great. The civilian people will remember and [be] proud of the two countries."

"We started the construction work June 20, and now the construction of the basement, wall and roof are almost finished," said MAF 1st Lt. E. Dandar, Mongolian construction team leader. "Our U.S. colleagues are working on the roof construction and doing carpentry. Once the water supply is connected, our planned work will finish on time." Local citizens thanked the Soldiers for their generous service and heartfelt work.

Exercise Khaan Quest 2011 ended when the participating troops conducted the pass and review. The Mongolian president, senior military representatives and the other nations' delegates took pictures with the exercise participants. Most plan to participate again in the next Khaan Quest, which has become an important peace support activity in the Asia-Pacific region. Khaan Quest gains United Nations training recognition and certification of participants; trains MAF, multinational and U.S. personnel; increases interoperability; and improves military relationships among participating nations. □



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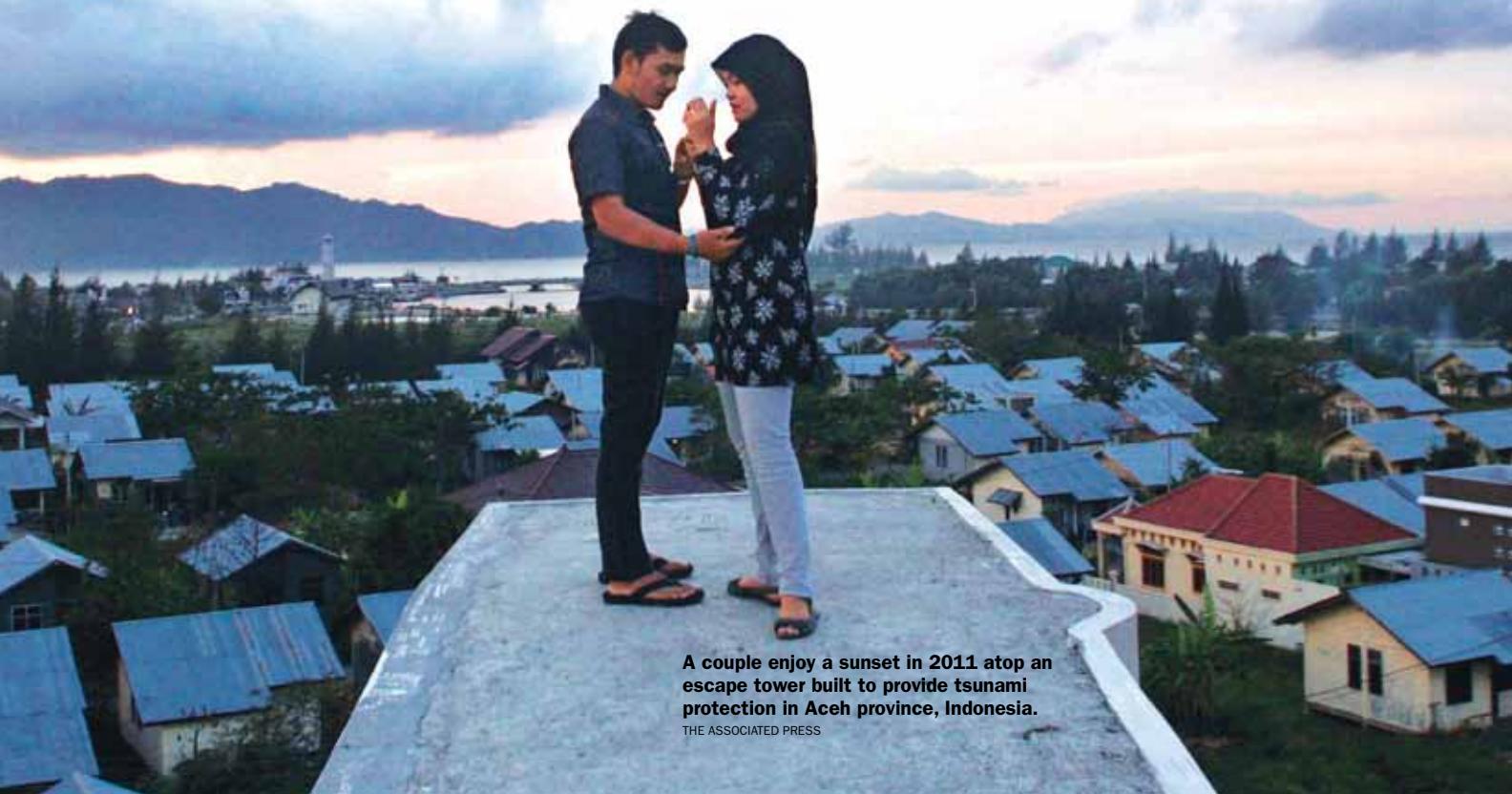
FORUM

Exploring the issues that impact so many lives



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ASIA TAMES THE CYCLE OF CONFLICT



SURIN PITSUWAN

The world today seems rife with conflict and catastrophes, both natural and man-made, and governments and international institutions are rightly focused on people's needs caught in these events.

What we must grasp at this potentially historic time is that we can, and must, take steps right now to break the cycle of conflict and instability — or run the risk of even broader and longer-lasting unrest — that will lead to dire social and economic developmental impacts.

People living in areas affected by violence, for example, are three times more likely to be in poverty and twice as likely to have no access to schools, affecting women and children in particular, and hence the future.

The goals are straightforward and obvious to many of us. Provide more jobs to give people hope for the future, both for themselves and for the next generation.

Provide for their personal safety and security from crime and terrorism. Ensure that they can turn to a fair and effective justice system.

What is less obvious is how a country immersed in civil war or facing a daunting task of rebuilding after a natural disaster can achieve these objectives. The World Bank has created a global road map through the publication of its latest World Development Report, focusing on "conflict, security and development."

It stresses the roles that effective institutions need to play at local, national, regional and international levels. It highlights that the often courageous and determined reformers at the community level need to be able to rely on help from those inside and outside their country to improve citizen security, ensure justice and deliver jobs. And the help should be reasonably sustained.

The report also points to past achievements to show



An Acehnese journalist offers flowers for Japanese tsunami victims at a Banda Aceh tsunami memorial in March 2011.

what can be done, and Asia itself can be a showcase for those who want to break the cycle of joblessness, despair and conflict.

The necessary combination of local initiative, national and regional assistance, and global support is evident in Timor-Leste since the establishment of the peacekeeping mission there in 1999. It has also been showcased in the responses to the horrific disaster that befell Aceh, Indonesia, in 2004 and to Cyclone Nargis in Burma in 2008.

In all three instances, the Association of Southeast Asian Nations (ASEAN) played a regional role that addressed cultural sensitivities, smoothing the path for outside assistance. We've seen exceptional commitment of ASEAN member states in contributing to the response.

In Burma, ASEAN

paved the way for international aid and technical assistance from the World Bank, among others, to reach areas of the country that were devastated by Nargis, which took the lives of more than 130,000 men, women and children.

ASEAN also helped bring in technical assistance teams from the European Union to Aceh to help people begin rebuilding their lives.

ASEAN's experience also serves to reassure that regional groups like these are developing greater capacity with each experience of peacekeeping or disaster relief.

In Timor-Leste, the peacekeeping mission was made possible by long years of joint training and exercises with the armed forces of ASEAN.



Cyclists from around the world start the inaugural Tour de Timor on August 24, 2011, from the presidential palace in the capital Dili.

In its effort to help Burma after Cyclone Nargis, ASEAN was able to draw on experienced personnel from ASEAN member states.

What ASEAN's experience has shown, and what the 2011 World Development Report illustrates, is that an alliance of local, national, regional and global groups can help build the strong institutions that are essential to providing citizen security, justice and jobs.

We must be prepared to act quickly if we are to prevent new spirals of violence and conflict when they emerge, either because local institutions have been allowed to fail through poor governance or they have been weakened or even destroyed by natural disasters.

These three issues — security, justice and jobs — lie at the heart of the unrest we are now seeing most spectacularly in the Middle East and North Africa, regions with grim employment pictures, particularly for youth and for women.

If we are to convince today's youth that there is a brighter future, then we need to help build the institutions that will educate them, help them find work, protect them from harm and provide them with the public services those in wealthier, more secure countries take for granted.

We have seen the results of failure. The use of child soldiers in Africa and Asia. The specter of terrorism taking seed in failed states. But we have also seen success that should make us all the more determined to break this cycle.

Now the world has the chance to show it has learned from the past that we recognize the need to provide assistance to rebuild a country's judicial system or support jobs programs rather than provide arms and military might.

The World Development Report warns that real rebuilding can take almost a generation. Events today should make it clear that people living in war zones and disaster areas simply cannot wait.

Surin Pitsuwan is the secretary-general for the Association of Southeast Asian Nations. He is also the former minister of foreign affairs for Thailand. The article first appeared in *The Jakarta Post* on March 5, 2011.

SOMALIA



AGENCE FRANCE PRESSE

a chance at NORMALCY

Federal Soldiers sip tea while children kick a football on a dusty street in the Somali capital of Mogadishu in October 2011: a scene of daily life unthinkable in August, when Islamist Shebab fighters were in control.

"We came back last month after the Shebab left, because it was not safe before," Abdulah Abubakr said in October 2011. "The Shebab would beat us; they would even kill people without questioning, and then there was heavy fighting," added the 70-year-old former truck driver in Mogadishu's northeastern Tawfiq district, a former Shebab stronghold.

After four years of bitter battles, African Union-backed government troops forced the al-Qaida-linked Shebab to pull out of key positions in August 2011, leaving die-hard rebel pockets on the edges of the city. The pullout allowed some areas of the city to return to relatively normal life.

"People are still scared because they fear that the Shebab will return," said Abdirahman Mohamed, a Soldier with Somalia's transitional government, working alongside African Union forces. "But things are getting better, the fighting has calmed down here."

Agence France-Presse

COLOMBIA



AGENCE FRANCE PRESSE

DRUG LAB SHUT DOWN

Colombian police from an anti-narcotics unit guard some 5 tons of cocaine seized in October 2011 from an illegal laboratory belonging to the Colombia Popular Anti-subversive Revolutionary Army of Colombia, also known as ERPAC. The lab in the municipality of Puerto Gaitan, Meta department, included 34 rustic buildings capable of producing 500 to 800 kilograms of cocaine per week.

Agence France-Presse

CARTEL HOUSE TURNED AROUND

Mexican officials say a house once used by drug traffickers to hold kidnapping victims in the border city of Tijuana will be converted into a children's club.

The facility will offer art workshops, computer classes and talks on addiction prevention for children in the rough neighborhood of Camino Verde, Social Development Department Secretary Heriberto Felix Guerra said in October 2011.

The new Boys and Girls Club is part of a federal government effort to provide social activities that pull children away from the temptations of organized crime, Guerra said.

Authorities seized the three-story building with eight bedrooms and bullet holes still visible in 2007 from members of the Arellano Felix cartel. *The Associated Press*

Mexican Social Development Department Secretary Heriberto Felix Guerra sits with a girl in Michoacan, Mexico.



AGENCE FRANCE PRESSE

NUCLEAR TALKS PLANNED

The United Nations named Finland to host a sensitive conference in 2012 on making the Middle East free of nuclear arms and weapons of mass destruction.

A Finnish government envoy will also lead international efforts to persuade archrivals Iran and Israel to attend the meeting.

Finland's undersecretary of state for foreign affairs, Jaakko Laajava, faces a "daunting task" of organizing the conference, said Anne Penketh, program director for the British American Security Information Council.

The idea of moving toward a weapons-free Middle East was formally backed at a 2010 meeting on the 1995 Nuclear Non-Proliferation Treaty. The United States, Russia and Britain were the main sponsors. U.N. leader Ban Ki-moon has also made nuclear disarmament one of his top priorities. *Agence France-Presse*

BHUTAN
CATCHES

Royal Wedding FEVER

STORY AND PHOTOS BY
AGENCE FRANCE-PRESSE



1



2



3

The royal dress weavers were hard at work as excitement built in Bhutan before the October 2011 royal wedding that saw the young king of the Himalayan nation wed in a fairy-tale ceremony. The Oxford-educated, mountain-biking fanatic Jigme Khesar Namgyel Wangchuck, 31, who was crowned in 2008 at the start of democracy in the Buddhist-majority country, married student Jetsun Pema, a commoner, on October 13.

Organizers planned a low-key affair for a royal family famed for its common touch. Regardless, the Bhutanese geared up to mark the momentous occasion in the life of the reclusive kingdom between China and India.

In their apartment in the capital Thimphu during the lead-up to the wedding, weavers Kelzang Choden and her mother hurriedly worked on an outfit for the future queen, an intricately patterned dress of geometric shapes dominated by gold thread and yellow.

"She will wear according to her element. There are five elements in our culture. For example, red is fire, and earth is yellow," Choden explained to Agence France-Presse (AFP). "Her element is earth, so it will probably be mostly yellow."

Pema, 21 at the time of the ceremony, ordered numerous "kiras," the elegant national dress for women made from raw silk. Each kira takes months to finish and can cost up to U.S. \$3,000. Several famed weavers competed for the honor of clothing her on the big day.

"It would be the biggest privilege," said Choden, whose mother, Kuenzang Wangmo, has designed outfits for the previous king and his four wives, as well as the younger sister of the present king.

"SIMPLE AND TRADITIONAL"

Bhutan, famed for its invention of "Gross National Happiness" to measure progress and its citizens' well-being, is one of the most remote and insular places on Earth. It had no roads or currency until the 1960s, allowed television only in 1999 and continues to resist the temptation of mass tourism. Instead, the kingdom prefers to allow access only to small, organized groups of well-heeled visitors.

The main wedding ceremony took place in a stunning fortress and monastery in the town of Punakha, set in a steep valley at the confluence of two fast-running mountain rivers. The giant building, accessible by footbridge and intricately decorated with wall paintings and carvings, was spruced up for the occasion.

"His Majesty has been consistent all along that the events should be simple and traditional. It's how he operates in his own life," royal spokesman Dorji Wangchuck told AFP. The monarch lives in a cottage in Thimphu rather than a palace and is famed for inviting his subjects to tea.

King Wangchuck, a keen basketball player and Elvis fan, and four of his forebears have ruled Bhutan since 1907, when the royal family took over and brought stability to the previously war-ravaged nation.

The bride is the daughter of an airline pilot whose family has long known the royals, according to *The Washington Post*.

The wedding kicked off three days of celebration, wrapping up with the final festivities at the city's sports stadium, where the public had the opportunity to glimpse the newlyweds. It proved to be a spectacle of traditional dance and music, but the Bhutanese themselves were also part of the show, as they wore their finest traditional clothing. "It's a moment when the entire nation is coming together," the king's spokesman told The Associated Press.



4

1. King Jigme Khesar Namgyel Wangchuck is famed for inviting his people for tea, and Queen Jetsun Pema is a student.

2. Bhutanese artists wait their turn to perform a traditional dance during a dress rehearsal for the royal wedding in Thimphu on October 11, 2011.

3. Bhutanese children prepare to perform during a dress rehearsal for the royal wedding.

4. Newly crowned King and Queen of Bhutan are joined by a crowd of joyous Bhutanese after their marriage ceremony at the Dzong monastery in Punakha on October 13, 2011.

JAPAN'S BIGGEST TECH FAIR

Smartphones detecting bad breath and radiation, twistable remote controls and a super-thin tablet computer stood out among the cutting-edge gadgets at Japan's biggest tech fair in October 2011.

About 600 firms unveiled their innovations at the Combined Exhibition of Advanced Technologies in Chiba, near Tokyo, which drew about 200,000 visitors during its five-day run, organizers said.

The impact of Japan's March 11 earthquake, tsunami and nuclear disaster gave added resonance to technologies on display, particularly those aimed at improving urban infrastructure and energy efficiency.

Demand soared for state-of-the-art radiation counters and power-saving technologies after Japan's disasters sparked fears over contamination and led to power shortages, requiring cuts to energy consumption in summer 2011. Agence France-Presse



COMBINED EXHIBITION OF ADVANCED TECHNOLOGIES

Legislation? *There's an App for That*

Members of the Dutch Senate won't strain their backs by carrying stacks of printed documents from work anymore because they are all now expected to work on their Apple iPads.

When members of the Senate returned from the summer recess in fall 2011, they had one week left to work with printed files. After that, they stopped printing documents and wasting paper, and began using a new app especially designed for their iPads.

The Dutch Senate became the first in Europe to distribute documents through a tablet computer in October 2011. "We have had enormous piles of paper couriered to our houses every week, thick envelopes with planning and committee meeting documents, but now from 6 p.m. every Friday you just open the Senate app and find all the documents for the next week," said Secretary-General of the Senate Geert Jan Hamilton. Reuters

REUTERS



Small Computer with Small Price Tag



India launched its long-awaited "computer for the masses" in October 2011, unveiling an inexpensive tablet device designed to bring the information technology revolution to tens of millions of students.

DataWind, the Canada-based manufacturer, said the government was buying 100,000 of the "Aakash" (or "Sky") tablets at 2,276 rupees (U.S. \$46). Each tablet is to be given away for free to university and college students.

The price of what has been dubbed "the world's cheapest computer" should fall to U.S. \$35 and could even be hammered down as low as U.S. \$10, DataWind said at the launch in New Delhi.

The computer has an 18-centimeter touchscreen, Wi-Fi Internet function, a multimedia player and 180 minutes of battery power. Agence France-Presse



AGENCE FRANCE PRESSE

ON COURSE TO BE A GOLF POWER

Asia can emerge as a golf power within the next decade, as access to top-level equipment and training techniques increases, former world No. 1 Nick Faldo said in September 2011.

The Englishman said that when he started his professional career more than 30 years ago, American golfers had by far the best equipment.

"That's all changed now," he told reporters in Singapore, on the sidelines of the Asian Amateur Championship. Young Asian golfers now have the same equipment and a similar understanding of the game as their counterparts in the United States and Europe, he said.

Asia has already seen the emergence of players such as 20-year-old Ryo Ishikawa (pictured) of Japan, the winner of 10 titles on the Japan Golf Tour, and South Korea's Y.E. Yang, 39, the only Asian man to win a major title by beating Tiger Woods in the PGA Championship in 2009.

Agence France-Presse



Sailing Through the Philippines

Friends and families step onto the beach in their casual clothes to watch the brightly colored sails of dozens of boats, as they race by, harnessing the power of the wind and the waves on a perfect sunny weekend in the Philippines.

To boost the country's burgeoning sailing scene and promote a more eco-friendly coastal lifestyle, the Philippine Inter-Island Sailing Foundation (PHINSAF) kicked off the Regatta Traveler's series in fall 2011 in Nasugbu, the *Manila Bulletin* reported. The race uses Hobie 16 catamarans that don't require gasoline for power.

"Sailing is something that's picking up. We just want to reintroduce sailing to Filipinos, because the Philippines can be considered as the 'Caribbean of Asia.' We just have the perfect sailing conditions," PHINSAF Chairman Monchu Garcia told the *Manila Bulletin*. FORUM staff



INTERNATIONAL GAME FISH ASSOCIATION

A BIG FISH TALE

"I don't think the fish knew what was happening," Mick Ma told the *Darien Times* newspaper after battling for 27 minutes to reel in a 107-centimeter redtail catfish from a central Thailand lake to set the all-tackle world record for length.

"Bigger fish are harder to catch not because of their size," the avid sport fisherman told the *Times*, but their survival skills. Their "size probably indicates that they've been fished before and they know how to break off lines or they know which baits to avoid."

Although Ma's fish set the record for length, the 25-kilogram catfish did not set the record for weight. That record stands at 56 kilograms. FORUM staff

Duty Calls

South Korean pop star Rain bid farewell to tearful fans in October 2011 as he put one of Asia's most successful entertainment careers on hold to enter boot camp and begin nearly two years of military service.

The 29-year-old singer and actor, his hair neatly cropped, gave a military salute to fans before he disappeared into an Army base in Uijeongbu, north of Seoul.

"Thank you for the 10 years of love," Rain told hundreds of gathered fans as tears welled in his eyes. Many of the fans were from Japan and China and held banners with messages meant to cheer him.

Kim Hee-ra, a 21-year-old Sogang University student in Seoul, said she was sad to see Rain go but glad that he was fulfilling his duties.

"The fact that Rain entered the Army without any attempts to be exempted will positively affect his future career," she said. The Associated Press



REUTERS



AGENCE FRANCE PRESSE

White-hot color

White has passed silver as the world's most popular color for carmakers, according to an annual survey by paint maker PPG Industries.

Silver spent a decade on top before 2011, but PPG said in October that 21 percent of vehicles built in the 2011 model year were white. Black and silver tied for second at 20 percent each.

Carmakerstailortheircolorstoconsumerdemand.Silver wasthemostpopularcolorinAsia.Whitewasthetopcolor inNorthAmerica, andblackwasfirstinEurope.PPGforecasts color trends based on fashion, interior design and other factors. The Associated Press

Super Obsession



Herbert Chavez may not be able to leap tall buildings in a single bound, but he sure looks as if he could. The Filipino costume store owner has undergone a series of surgeries on his nose, cheeks, lips, thighs and chin to look more like Superman. He plans to become even more like the "Man of Steel" by having metal inserted in his legs to make him taller. Reuters

Bottled Memories



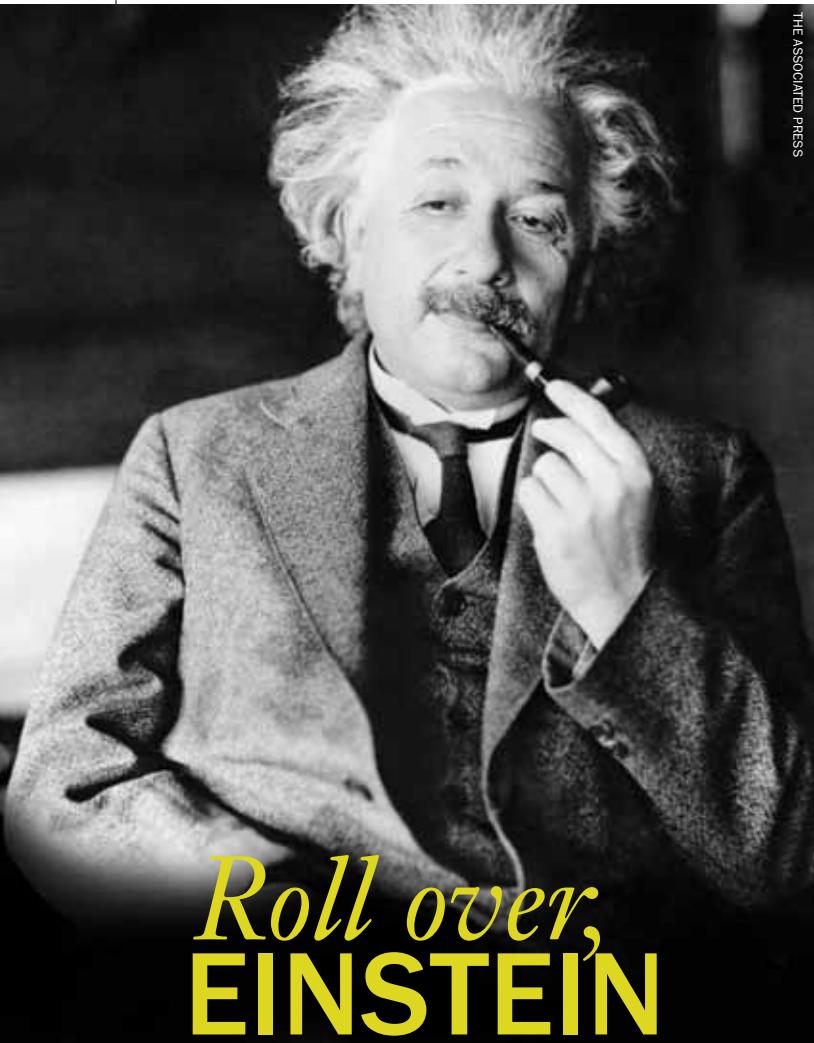
U.S. NAVY

A Japanese teenager expressed her gratitude in September 2011 after a U.S. Sailor in Hawaii found a bottle she had tossed into the sea off Japan's southern coast nearly six years ago.

Saki Arikawa, 17 at the time of the find, said she had almost forgotten about the bottle and initially couldn't believe it was recovered.

"It's a miracle," she said from her hometown in Kagoshima.

Navy Petty Officer Jon Moore discovered the clear glass bottle during a beach cleanup at the Pacific Missile Range Facility on Kauai island. The bottle contained four origami cranes — symbols of peace in Japan — as well as a photo of Arikawa's elementary school class and a note dated March 25, 2006, and signed by Arikawa saying she wanted it to be "a graduation memory." The Associated Press



THE ASSOCIATED PRESS

Roll over, EINSTEIN

Law of physics challenged

One of the pillars of physics and Albert Einstein's theory of relativity — that nothing can go faster than the speed of light — was rocked in September 2011 by findings from one of the world's foremost laboratories.

European researchers said they clocked an oddball type of subatomic particle, called a neutrino, going faster than 299,792 kilometers per second, which was long considered the cosmic speed limit.

The claim drew skepticism, with one outside physicist equating it with saying you have a flying carpet. In fact, the researchers themselves are not ready to proclaim a discovery and are asking other physicists to independently verify their findings.

"The feeling that most people have is this can't be right, this can't be real," said James Gillies, a spokesman for the European Organization for Nuclear Research (CERN), which provided the particle accelerator that sent neutrinos on their breakneck 730-kilometer trip underground from Geneva to Italy in 60 nanoseconds, or billionths of seconds.

Going faster than light is something that is not supposed to happen, according to Einstein's 1905 special

theory of relativity, the one made famous by the equation "E equals mc^2 ."

It is "a revolutionary discovery if confirmed," said Alan Kostelecky, a theoretical physicist at Indiana University in the United States.

Stephen Parke, who is head theoretician at the Fermilab near the U.S. city of Chicago and was not part of the research, said: "It's a shock. It's going to cause us problems, no doubt about that — if it's true." A team at Fermilab had similar faster-than-light results in 2007, but a large margin of error undercut their scientific significance.

Even if confirmed, these results won't change the way we live or the way the world works. After all, these particles have presumably been speed demons for billions of years. But the finding will fundamentally alter our understanding of how the universe operates, physicists said.

Einstein's special relativity theory, which says that energy equals mass times the speed of light squared, underlies "pretty much everything in modern physics," said John Ellis, a theoretical physicist at CERN who was not involved in the experiment. "It has worked perfectly up until now."

France's National Institute for Nuclear and Particle Physics Research collaborated with Italy's Gran Sasso National Laboratory on the CERN experiment.

If anything is going to throw a cosmic twist into Einstein's theories, it's not surprising that it's the strange particles known as neutrinos. These odd slivers of an atom that have almost no mass have confounded physicists for about 80 years.

Columbia University physicist Brian Greene said neutrinos theoretically can travel at different speeds depending on how much energy they have. Some other mysterious particles whose existence is still only theorized could be similarly speedy, he said.

Drew Baden, chairman of the physics department at the University of Maryland in the U.S., said it is more likely that the CERN findings are due to measurement errors or a fluke. Tracking neutrinos is difficult, he said. "This is ridiculous what they're putting out," Baden said. "Until this is verified by another group, it's flying carpets."

So if the neutrinos are pulling this fast one on Einstein, how can it happen?

Fermilab's Parke said there could be a cosmic shortcut through another dimension — physics theory is full of unseen dimensions — that allows the neutrinos to beat the speed of light.

Indiana's Kostelecky theorizes that there are situations in which the background is different in the universe, not perfectly symmetrical as Einstein says. Those changes in background may alter the speed of light and the speed of neutrinos.

That doesn't mean Einstein's theory is ready for the trash heap. "I don't think you're going to ever kill Einstein's theory. You can't. It works," Kostelecky said. There are just times when an additional explanation is needed.

If the European findings are correct, "this would change the idea of how the universe is put together," Columbia's Greene said. But he added: "I would bet just about everything I hold dear that this won't hold up to scrutiny." The Associated Press

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