JAMES LEE WITT ASSOCIATES, LLC

Building Back Better and Safer

Private Sector Summit on Post-Tsunami Reconstruction

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Preface

On December 26, 2004, the world witnessed the awesome power of nature when a major earthquake struck off the coast of Indonesia and generated a tsunami that traveled across the Indian Ocean and Andaman Sea leaving death and destruction in its path. We were all reminded of how fragile human communities and our environment can be in the face of such powerful forces.

I have traveled to South Asia to the tsunami-affected regions twice. I have been astounded by what I saw—the unbelievable magnitude of the devastation and lives lost; the deep sense of personal loss of people trying to reconstruct their lives; and the remarkable outpouring of international generosity. I have seen many disaster scenes in my career—but none like these.

In January I traveled to Jakarta at the invitation of the U.S. Chamber of Commerce and in February 2005, I was asked by the US-ASEAN Business Council (USABC) to assess earthquake and tsunami response operations and reconstruction planning in Thailand, Sri Lanka, and Indonesia. I provided my perspective on priority actions for reconstruction in each country and made suggestions for private sector involvement in a presentation to the members of the USABC and in this report to the Private Sector Summit.

I traveled to the region during the first two weeks of March with two of my professional staff and the President of the Board of Directors of the International Code Council (ICC). We looked at response operations in each country and talked to local officials, government agencies, staff of non-governmental organizations (NGOs), and ordinary citizens. My staff also researched status reports from various organizations involved in the relief and reconstruction planning.

This report conveys the overarching themes of our assessment. It highlights areas where action is needed and provides some recommendations on how the business sector can help improve relief operations and reconstruction programs and assist the countries in the region in developing long-term emergency management plans to protect their future.

James Lee Witt
Chairman and Chief Executive Officer
James Lee Witt Associates

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Principles of Effective Emergency Management

For over 25 years, I have been helping people deal with disasters—first in Arkansas at local and state levels; then at the federal level as Director of the Federal Emergency Management Agency (FEMA); and now in private practice as a consultant to governments, businesses, and private organizations in the U.S. and abroad. As an emergency management professional, I have seen many disasters and learned valuable lessons from each of them.

The most essential, universal elements of effective emergency management are applicable in the most developed countries or the most underdeveloped. Some of these principles provide the "lens" through which I looked at the Asian tsunami response and reconstruction. Particularly, my experience visiting the area reminded me of four important principles of emergency management, discussed below.

Restoring the community is always a priority.
In the immediate days and weeks after a major disaster, the priority is on rescuing survivors and caring for the injured and displaced. After basic needs are met, efforts should be aimed at getting the community functioning again. This involves emergency repairs to restore critical public facilities such as transportation, communications, power, water, sanitation, hospitals, and schools. These efforts also include getting economic enterprises functioning to provide jobs, goods, and community services. Another priority is moving people out of emergency shelters into safe, temporary housing until new housing is constructed.

These activities address the physical aspects of the community. Restoring the less tangible aspects of community life is often far more difficult. Many people are traumatized, families have been torn apart, their livelihoods destroyed, their sense of community shattered. Control of their destinies rests in the hands of others. Getting people involved in recreating their communities and restoring their livelihoods will accelerate rebuilding, foster hope for a better future, and help heal the psychological wounds the catastrophe has caused.

FIGURE 1: WITH WAVES THAT REACHED TREE HEIGHT,
THE TSUNAMI DEVASTATED ENTIRE VILLAGES IN ITS WAKE

Emergency management is foremost a national system of coordination.
No single organization will have the resources needed to deal with a disaster of this magnitude. Therefore, the resources of many organizations and those of many nations must be mobilized. There must be an efficient process of assessing needs and coordinating the mobilization of resources to meet those needs. There should be a coordinator at each level of government who acts as a conductor to orchestrate the many players required as resources flow from multiple sources to the communities affected.

This system of coordination typically includes trained personnel and operating facilities at the national level, state or provincial level, and at major localities. All of these personnel must be connected by compatible communications, information systems, and coordination procedures. The coordinators provide the forum for all responding entities to organize their efforts, reduce duplication, and fill service gaps. It also provides a structure for improving accountability of resources.

Mitigation saves lives and money.
The long-term answer to lessening human misery, the loss of life and property, and economic disruption from disasters is to prevent or significantly decrease them through risk reduction and mitigation. This involves setting policies to rebuild more resilient structures through stronger construction standards. It might include prohibiting building in vulnerable areas or requiring structures to be elevated. It includes warning people that danger is approaching and then directing them to safety.

Reconstruction following a disaster is a critical opportunity to build safer communities and improve their sustainability by designing projects that balance the interests of environmental protection, economic development, and social equity.

Trained professionals and expert technical assistance are the most critical resources.
A relatively small core of trained disaster professionals can provide the management skills to plan, organize, coordinate, and manage disaster operations involving many volunteers and organizations. Developing a capability to train disaster management professionals and public officials should be a priority for any nation. Trained professionals and technical experts can also help citizens organize themselves to better cope with future disasters by taking actions to prepare themselves and reduce their vulnerabilities.

As my colleagues and I traveled and reviewed reports of the massive mobilization of resources, both donors and volunteers, we measured what we saw against these principles as well as our experience in emergency management.

FIGURE 2: SUCCESSFUL RECONSTRUCTION WILL REQUIRE COORDINATION AND PLANNING

Overview of Four Countries

This section provides a brief summary of the tsunami's impact and the resulting problems faced by the countries surveyed. It provides context for the recommendations included later in this report.

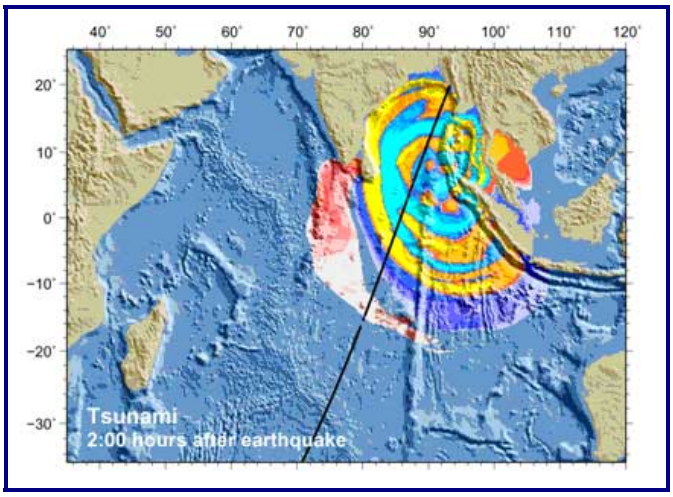

FIGURE 3: MAGNITUDE OF THE TSUNAMI

Sources for the information covered here include first-person observation as well as statistics and statements documented in publications such as *The Washington Post*, *The Jakarta Times*, and *The New York Times*, as well as press releases and governmental situation reports from the United States and abroad.

Thailand

EFFECTS OF THE TSUNAMI

The tsunami struck the southwest coast of the Thai Peninsula about 90 minutes after the earthquake. The area is not heavily populated but contains some of Thailand's most beautiful and popular tourist resorts.

The confirmed death toll stands at about 5,400 people, with perhaps as many as half being foreign tourists. Another 3,000 people are missing and presumed dead, leaving about 900 orphaned Thai children. Six coastal provinces were struck by the tsunami, with over 400 villages affected. Most of the media coverage has centered on the resort island of Phuket; however, other nearby areas were hit harder and had more casualties.

According to the Thai Department of Disaster Prevention and Mitigation:

- Approximately 60,000 persons in 12,000 households were affected
- About 3,600 houses were completely destroyed; another 3,000 homes were partly damaged
- Business losses are estimated to be more than $320 million, most of it to tourism
- The fishery industry losses amount to about $44 million, including more than 1,200 large vessels and another 3,400 small vessels
- More than 1,200 fish and shrimp farms were lost
- Damage to transportation infrastructure is estimated to be over $26 million

FIGURE 4: MAP OF THAILAND

The tables that follow summarize community and industry losses and damage in the area (Table 1) and damage to infrastructural facilities (Table 2).

TABLE 1: PERSONS AFFECTED AND PROPERTY DAMAGE

Description	Numbers Affected
Villages	412
Persons	58,550
Households	12,480
Houses – Totally Damaged	3,615
Houses – Partly Damaged	3,198
Industry Affected	**U.S. Dollars**
Fishery	$43,936,335
Livestock	$440,640
Agriculture	$212,404
Businesses	$321,315,443

TABLE 2: INFRASTRUCTURAL FACILITIES DAMAGE SUMMARY IN U.S. DOLLARS

Description	Units	U.S. Dollars
Piers	38	$1,399,523
Concrete Bridges	29	$988,363
Wooden Bridges	6	$53,250
Box Culverts	12	$61,400
Roads	98	$4,764,852
Dykes	1	$520,000
Public Utilities	—	$18,582,612
Total		**$26,370,000**

Displaced persons have been relocated in tents, which, considering the tropical climate, is undesirable, at best. With little or no temporary or permanent housing, families must continue to live in tents or makeshift camps during the rainy season, which is upon us. For the most part, they are idle and they have no work.

FIGURE 5: TENTS ARE SET UP AS TEMPORARY SHELTERS

DISASTER RESPONSE

The government of Thailand performed admirably immediately following the tsunami. Much of the credit has been given to Prime Minister Thaksin who actively took personal charge of relief and recovery efforts. The government began quickly with search and rescue and continued these operations for a month. The government also led efforts to restore telecommunication and electricity systems; receive and distribute relief aid; and contain potential epidemics. Most of the relief and recovery efforts for Thai citizens were directed and handled by local governments.

The national government focused on getting foreign nationals out of the affected areas to Bangkok, often flown by the Royal Thai Air Force, and on to flights home, whether or not they had passports or tickets. They processed 5,000 people from around the world in the first week by establishing a one-stop immigration service in the Bangkok airport. The government

is still working to identify bodies with DNA testing and to repatriate them.

The military began operations the second day after the tsunami to clear debris and garbage. Soon the beaches were clean, though the debris appears to have simply been relocated to the central parts of the area—not really disposed of.

The focus has been on victim relief and restoring the tourist industry in the affected provinces. Many hotel employees who worked on Phuket Island were lost in the tsunami. While hotels have re-opened and some tourists have returned, no organized worker training has begun to replace the lost laborers.

The Thai government freely admits its shortcomings, particularly its weak emergency management infrastructure and absence of warning systems. The government is eager to improve its capability but is not accepting aid money at the national level for purposes other than direct assistance to victims.

FIGURE 6: GETTING THE COMMUNITY INVOLVED IN RECONSTRUCTION IS A PRIORITY

RECONSTRUCTION

Permanent housing construction has started, but houses are being built to varying standards in the absence of uniform building codes. The quality of housing is uneven and will be a problem in the future. Adjacent villages are receiving wide disparities in services because of a lack of coordination. Only one site we visited was planning to elevate the houses when they rebuild—an obvious solution to the problem high waves present. Few people in the affected areas have been trained as builders and have not been able to earn income as a part of the recovery.

Confident that the government set-back requirement of 100 meters for reconstruction will be lifted, some victims are waiting to rebuild. Others are scrambling to stake out the remains of their homes so no one else will attempt to build on the sites. The remains are often just a tile floor on the beach.

Villages are being relocated, but there is less attention being paid to rebuilding infrastructure systems including water and waste water and sanitation. Primary roads are passable, but they remain in disrepair. Donor organizations are "adopting" villages for reconstruction, but the infrastructure systems that serve the villages have thus far been neglected.

Sri Lanka

EFFECTS OF THE TSUNAMI

Two hours after the earthquake, tsunami waves devastated long stretches of Sri Lanka's southern and northeastern coasts. The government is reporting 36,402 people as dead, presumed dead, or missing.

Approximately 114,000 homes were destroyed, and 553,000 people have been displaced. Many victims are still suffering from the psychological trauma of losing their families and their possessions. Reconstruction costs are estimated to be $1.5 billion or approximately 7% of the country's GDP, a tremendous blow for a small country. Table 3 reports damage and losses for the country.

FIGURE 7: MAP OF SRI LANKA (SOURCE: WWW.ACQWEATHER.COM)

Some assets damaged or destroyed include:

- 260 primary and secondary schools with 91 schools to be relocated
- 20 rail stations, 15 rail bridges, culverts and the signaling system
- 19,000 boats and 80% of the fisheries infrastructural facilities
- $30 million damage to cottage industries such as clothing and handicrafts
- $10 million damage to agriculture and livestock

TABLE 3: SRI LANKA SITUATION REPORT

Description	Number Affected
Affected Families	234,083
Displaced Families	109,680
Displaced Persons	552,641
Deaths	30,959
Injured	21,441
Missing	5,443
Completely Damaged Houses	65,349
Partially Damaged Houses	48,272
Camps	309

Relief efforts in this area will continue for months. There are 141,985 people in tent camps and another 411,302 living with family or friends. In recent days, some of the camps have been flooded by rains,

causing sanitation problems. Most people are still receiving bottled drinking water and food aid. Some transitional housing units have been built. Although repair and reconstruction have hardly begun on severely damaged schools, some children have returned to school with their lessons held in tents and other make-shift shelters.

FIGURE 8: STANDING WATER REMAINS IN SRI LANKA

DISASTER RESPONSE

Government officials acknowledged that coordination to date has been insufficient. The tsunami response has been conducted by taskforces instead of government organizations. The President of Sri Lanka initially appointed three task forces to respond to the tsunami: one for rescue and relief; a second for logistics and law; and a third for long-term reconstruction. The first two have been combined into TAFOR, the Task Force for Relief, which is managed from the Ministry of Defense. The third, TAFREN, is the Task Force for Rebuilding the Nation. It has become the most prominent as emphasis has begun to shift to reconstruction.

The government established an operations center in the affected area immediately following the tsunami but lacked the trained personnel necessary to keep it open. No emergency management training has been available for local officials. The government now recognizes the need for a national operations center and an emergency management plan.

Debris has been removed, much of it by the U.S. military. In the southeast, it was abandoned 20–30 meters from the coast. Debris disposal or recycling has not been planned or started. In some areas, enough road, rail and bridge repairs have been completed so that commerce can occur. In others, it still is not possible to get building materials into the area. A substantial number of trained, English-speaking hotel employees have been lost. Retraining of an English-speaking hotel labor force has not begun in an organized way.

FIGURE 9: RECONSTRUCTION IS UNDERWAY IN SRI LANKAN COMMUNITIES

RECONSTRUCTION

In February 2005, TAFREN completed a comprehensive needs assessment that includes cost estimates (Table 4). The government's draft of the "Rebuilding Sri Lanka Action Plan" proposes construction of 62 townships, rebuilding infrastructure, and granting assistance to affected families to rebuild houses. However, there is a lack of technical capacity to support implementation of the projects. Informing NGOs about the plan and coordinating their efforts to support it are current challenges.

On April 7, 2005, the government announced that national reconstruction could get underway now that donors have firmly committed $1.5 billion dollars. The Asian Development Bank has approved a $197 million grant to help improve living conditions by restoring social and physical infrastructure, community and public services, and livelihoods.

The government must now move quickly to finalize land-use policies regarding set-back requirements for coastal development, accelerate efforts to verify land records, and end the confusion over land allocations for the many organizations involved in redevelopment.

TABLE 4: SRI LANKA NEEDS ASSESSMENT ON RECONSTRUCTION AND REBUILDING PHASE IN U.S. DOLLARS

Sector	Cost/U.S. Dollars
Road Development	$210,000,000
Rail Transport	$77,000,000
Telecommunication (Fishing & Rural)	$60,000,000
Water Supply & Sanitation	$190,000,000
Port Development	$32,000,000
Electricity	$115,000,000
Education	$90,000,000
Health	$100,000,000
Social Services & Welfare	$20,000,000
Housing & Townships	$400,000,000
Agriculture	$10,000,000
Fisheries	$250,000,000
Industrial Development	$34,000,000
Tourism	$58,000,000
Environment	$30,000,000
Enterprise Development	$55,000,000
Regulatory & Admin Infrastructure	$38,000,000
Micro Finance SME Credits	$150,000,000
Totals	$1,919,000,000

Indonesia

EFFECTS OF THE TSUNAMI

Approximately 30 minutes after the earthquake shaking stopped, a gigantic tsunami slammed into the northern part of Sumatra Island with catastrophic affects to the province of Aceh and, to a lesser degree, the province of North Sumatra.

As of April 18, 2005, official Indonesian government estimates place the number of dead and buried at 128,715, with another 37,063 missing, and 533,770 people displaced in 20 districts or cities. For Aceh and its people, the physical destruction is near 100 percent of the local GDP. The International Monetary Fund estimates the rebuilding of Aceh Province will cost $4–5 billion over five years.

According to the Indonesian government, the following examples characterize the substantial amount of assets destroyed or damaged in Aceh (Table 5 summarizes the overall damage in U.S. Dollars):

- 252,223 houses, 1,168 schools, 470 health facilities are damaged or destroyed
- 72 % of roads are damaged (67% were considered damaged before the tsunami)
- 60% of industry, 92,000 home businesses, and 60% of the fishing fleet are damaged or destroyed
- 30 % of the hotels, 17% of the restaurants, and 17% of small shops are damaged or destroyed

FIGURE 10: MAP OF INDONESIA (SOURCE: *LONELY PLANET*)

TABLE 5: DAMAGES AND LOSSES FOR INDONESIA

Sector	Damage	Losses	Total/ U.S. Dollars
Housing	$1,398,000,000	$39,000,000	$1,437,000,000
Schools	$119,000,000	$9,000,000	$128,000,000
Hospitals & Clinics	$82,000,000	$9,000,000	$91,000,000
Religious & Culture	$83,000,000	0	$83,000,000
Infrastructure	$636,000,000	$241,000,000	$877,000,000
Business & Economy	$352,000,000	$830,000,000	$1,182,000,000
Environment	$155,000,000	$394,000,000	$549,000,000
Governance & Admin	$84,000,000	$5,000,000	$89,000,000
Bank & Finance	$14,000,000	0	$14,000,000
Totals	**$2,923,000,000**	**$1,527,000,000**	**$4,450,000,000**

Temporary location centers, or barracks, have been constructed to relocate people out of the squalid tent camps. The wooden, tin roof barracks will provide temporary housing for almost 150,000 of the estimated 533,770 displaced persons for up to two years. The remaining displaced population is expected to be absorbed by local communities. The barracks system is an improvement over tents, but this type of shelter, with common sleeping and eating areas and cubicle-like living quarters, has its own set of social problems.

FIGURE 11: TENTS OFFER SHELTER BUT ARE NOT IDEAL FOR COMMUNITY LIVING

DISASTER RESPONSE

The emergency relief effort in Aceh is being conducted by the government of Indonesia, with a substantial amount of support from foreign governments and approximately 190 NGOs from throughout the world. However, the immediate impression on visiting Aceh is that there has been little central coordination of the response or relief efforts. Each group is acting independently. While the aid is making a real difference to the people, the total effort is unstructured, and there is a fair amount of confusion and duplication. Many people in Aceh

have yet to receive proper assistance. The tsunami destroyed road systems and bridges, hampering the provision of aid to some survivors. The area's geography is altered beyond recognition, making community reconstruction even more difficult.

Many local governments are simply not functioning, often because of the loss of community leaders and civil servants, which has rendered consultation and decision-making very difficult. Many people are still missing, and suspected burial sights throughout the devastated area are marked with Indonesian flags. Building back on these sites may be problematic.

A recent New York Times article, "Where Tsunami Ravaged, Barely a Sign of Relief," described the condition of Aceh this way: "Three months after a tsunami devastated this city, vast areas remain a flatland of rubble, mud and stagnant water. There is little sign in Aceh of the billions of dollars in donations from governments, aid organizations, civic groups and individual people who reached out to help from around the world." CARE, a non-governmental organization, estimates a 12-month transition from relief to reconstruction.

FIGURE 12: THE TSUNAMI DESTROYED ENTIRE COMMUNITIES IN ACEH

RECONSTRUCTION

On March 26, the government released its 12-volume master plan, or "Blueprint for Rehabilitation and Reconstruction." Volume One is a summary, with more details in functional volumes such as land planning, finance, the economy, environment, infrastructure, security, accountability, culture and human resources. Donor nations have pledged nearly $4 billion to finance the reconstruction in 2005–2009.

The Blue Print provides a road map for reconstruction, but more detailed implementation planning must take place quickly. This includes accelerating efforts to reconstruct land ownership records and finalizing land-use policies. Unfortunately, there is a lack of technical expertise to implement these plans. Approximately 80 percent of the damage is to private individuals and businesses rather than to the public sector, posing a particular challenge for the reconstruction strategy.

No government is adequately equipped to deal with a disaster as destructive as the Asian tsunami. The government of Indonesia recognizes the need to improve its emergency management system. However, in the meantime, relief and recovery activities continue to be ad hoc and not well coordinated. The national audit agency is having difficulty accounting for the aid money administered by the government.

The Republic of the Maldives

EFFECTS OF THE TSUNAMI

The tsunami washed over the islands of the Maldives around 9:20 a.m. local time, only 3 hours and 30 minutes after the earthquake. Waves from 4 to 14 feet high struck the 198 inhabited islands of the Maldives, which is one of the lowest lying countries on earth with an average elevation of only 1.5 meters. Officials estimate that up to 40% of the land was under water at one point in time. Fortunately, only 82 lives were lost with 26 still missing and about 1,300 injured. Over 4,000 homes were destroyed, leaving 15,000 people homeless and living in tents. It is estimated that a third of the population of 287,000 has been badly affected.

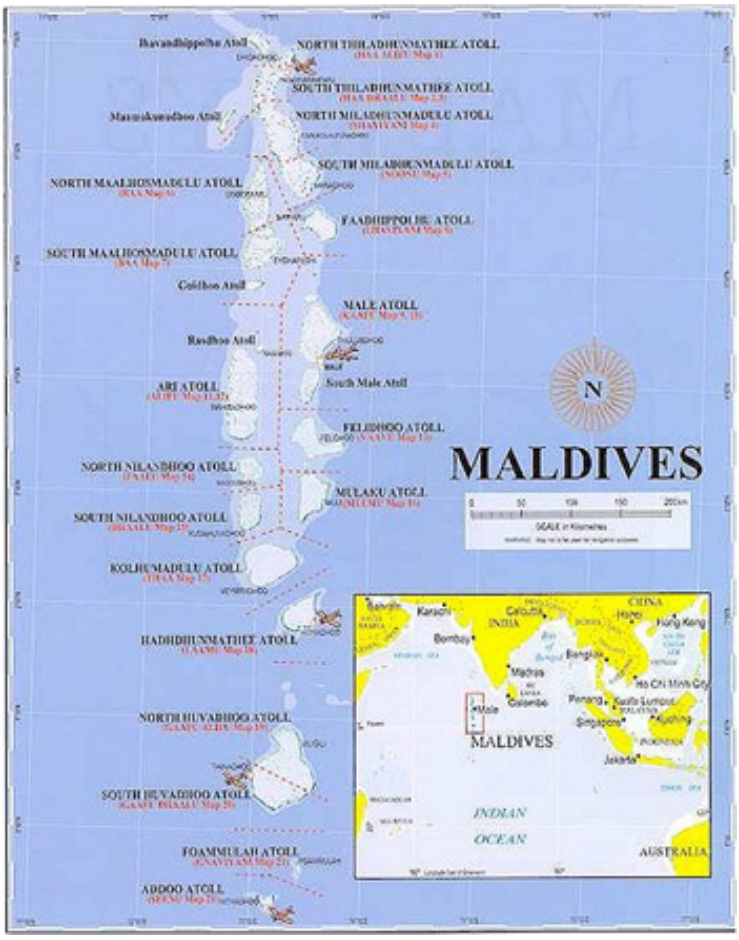

FIGURE 13: MAP OF THE MALDIVES ISLANDS

According to United Nations reports, the Maldives is considered the hardest hit because of the far-reaching economic impact. Total losses are estimated to be $470 million or 62% of the country's GDP. The Asian Development Bank estimates that the Republic's GDP growth will drop to 1 % in 2005, down from 7.5% in 2004.

The effects are widely spread over many small islands and over many miles of ocean, complicating the response effort. The following assets were destroyed or damaged:

- 13 islands have been totally evacuated; a total of 53 are severely damaged
- On 79 islands there is no safe water; on 26 there is no electricity; on 188 there are no telephones
- 19 of 87 tourist resorts are shutdown; tourism has dropped 70 percent
- The fishing industry, the second income producer after tourism, was badly affected, with fishing boats and coastal structures destroyed.

TABLE 6: ESTIMATED LOSSES AND FINANCING NEEDS IN U.S. DOLLARS

Sector	Total Losses	Cost of Reconstruction	Public Financing Needed
Education	$15,500,000	$21,100,000	$21,100,000
Health	$5,600,000	$12,200,000	$12,200,000
Housing	$64,800,000	$74,000,000	$74,000,000
Water & Sanitation	$13,100,000	$45,600,000	$45,600,000
Tourism	$230,000,000	$100,000,000	
Fisheries	$25,100,000	$14,100,000	$14,100,000
Agriculture	$11,100,000	$11,100,000	$11,100,000
Transport	$20,300,000	$27,000,000	$24,900,000
Power	$4,600,000	$4,600,000	$4,600,000
Livelihoods	$30,000,000	$17,400,000	$17,400,000
Environment		$9,800,000	$9,800,000
Disaster Risk Mgmt.		$4,400,000	$4,400,000
Other		$15,000,000	$15,000,000
Administration	$50,000,000	$50,000,000	$50,000,000
Totals	**$470,100,000**	**$406,300,000**	**$304,200,000**

DISASTER RESPONSE

According to reports, President Maumoon Abdul Gayoom took immediate and aggressive action in response to the disaster. On December 26, he established a Ministerial Committee and Special Task Force. Officials were organized into a newly created National Disaster Management Center to coordinate response activities. The Ministry of Defense coordinated the relief effort. Within 24 hours, electricity was restored to 20 islands, and by the next morning, relief supplies were being dispatched. The UN Office of Coordination and Humanitarian Assistance (OCHA) sent an assessment team for coordination and technical assistance, and several UN agencies provided emergency funding and logistics support to the Maldives.

Over 20 international NGOs as well as the International Red Cross have provided funds and services.

The Republic has established a Board of Overseers to make sure all contracts are awarded in accordance with international standards. The Board includes government officials and representatives of the UN and the private sector. Former U.S. Presidents George H. Bush and Bill Clinton visited the Maldives to survey the response and reconstruction and in a joint press conference held February 21, 2005, President Clinton praised the country as a good example of organization, planning, and accountability.

RECONSTRUCTION

The Maldives was one of the first countries to complete a reconstruction plan. It reinforces the Republic's existing policy of centralizing development on selected atolls to gain economies of scale, efficiency in providing services over dispersed islands with small populations, and moving services and population to safer, less vulnerable islands. This "Safe Islands Program" is part of an ongoing development plan to improve the quality of life, reduce poverty, increase democracy and improve civil justice and human rights.

The Republic has established a donor fund administered by the Ministry of Finance and Treasury to ensure accountability and transparency in the use of funds and to reduce duplication in projects. The Ministry is coordinating donor assistance. The amount of donor assistance needed is estimated to be $304 million by the World Bank. There is still a shortfall in donor pledges.

The World Bank has provided $14 million in funding for the reconstruction of livelihoods, increasing school capacity, and improving technical skills of implementing agencies. The Asian Development Bank has approved $20 million including $4.7 million in quick dispersal grants and $20.3 million for infrastructure grants to restore water, water-borne transportation, and restoration of power, fisheries and agriculture.

The United Nations Development Program (UNDP) has created an "Adopt-an-Island" program for the Maldives to generate public and private support in three key sectors: shelter reconstruction, infrastructure rehabilitation, and livelihood restoration. Under this program, donors can direct their support to readily identifiable projects and receive periodic updates on progress.

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Over-Arching Themes

All of the tsunami-affected countries are facing an enormous amount of reconstruction. Several over-arching themes related to reconstruction are discussed here.

Reconstruction is different from relief.
Much of the $6 billion committed to the region is for *relief* and cannot or will not be spent on *reconstruction*. Many of the NGOs will move on once they think relief is done. Most who stay for reconstruction and recovery will not stay for the long-haul. Of those who do stay, there will be more interest in building schools, for instance, than in building roads. Reconstruction requires skill in getting community involvement, and a great deal of technical expertise is needed.

Women and children present special challenges.
The affected countries have to complete an additional task that involves serious cultural and religious implications: Deciding what to do about the special impact of the tsunami on women and the implications for the role of women in many communities. More women than men were killed by the tsunami, leaving women and children vulnerable to exploitation. Many women now find themselves as sole providers for their families, but they may lack access to jobs, and, in some cases, the ability to hold title to land. These issues must be addressed.

A good master plan is needed before reconstruction begins.
In all these countries, governments and volunteer organizations are beginning to build housing. These efforts are often not well coordinated, and some will precede the infrastructure that is needed to support them. Relocation of villages requires a comprehensive planning process to ensure that rebuilt housing and public facilities function together as a coherent, safe, and sustainable community.

Coordination and technical assistance are necessary for reconstruction.
Obtaining high-quality technical assistance will be the primary component for successful recovery and reconstruction of the affected areas. Reconstruction is also the time to improve national emergency management coordination systems to be better prepared for the next disaster.

Training for emergencies must take place before the next disaster.
Professional, well-trained emergency preparedness teams must be established for each affected country in order to prepare for the next disaster. Further, each country must have a functioning and well-equipped emergency operations center.

Warning systems need higher priority.
The international community must establish a tsunami detection system in the Indian Ocean. However, we must not stop there. Each country must have a disaster warning system, and all endangered coastal areas must also be equipped with solar-powered siren warning systems with voice-over capability. Additionally, each fishing boat must be equipped with at least a simple radio.

Private sector participation is crucial to reconstruction.
In large-scale disasters, even the most capable governments must rely on the private sector, not only for financial support, but to provide the goods, services, and technology necessary for an effective response. Business participation is even more vital to a successful reconstruction of the tsunami-affected areas, as livelihood restoration becomes a priority and construction begins in earnest.

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Steps to Achieve These Goals

The primary goal for reconstruction is beyond returning communities to their previous sense of normalcy. It is, instead, *building back better*. Communities that are rebuilt to higher standards than before are less vulnerable to devastation in the future.

FIGURE 14: WORKERS HELP TO *BUILD BACK BETTER*

Each country has catalogued the extensive damage to their communities and economies. They have also calculated the costs of restoring them and recognize the incalculable human loss. Additionally, they have estimated the cost to provide essential counseling services for broken families and for those who continue to live in fear, who cannot imagine a return to any semblance of “normal life.”

FIGURE 15: HOUSES, SCHOOLS, AND INFRASTRUCTURE COMPONENTS WERE DESTROYED BY THE TSUNAMI

In the long term, building back better requires restoring entire communities, from rebuilding housing and critical infrastructure to providing psychological counseling and job training. From a short-term perspective, the challenge involves everything from debris removal to rebuilding temporary housing to getting people back to work.

The following recommendations are based on national and local needs. These should be evaluated and adapted to fit the special circumstances of each nation and community. It is the principles that are important in the recommendations that follow.

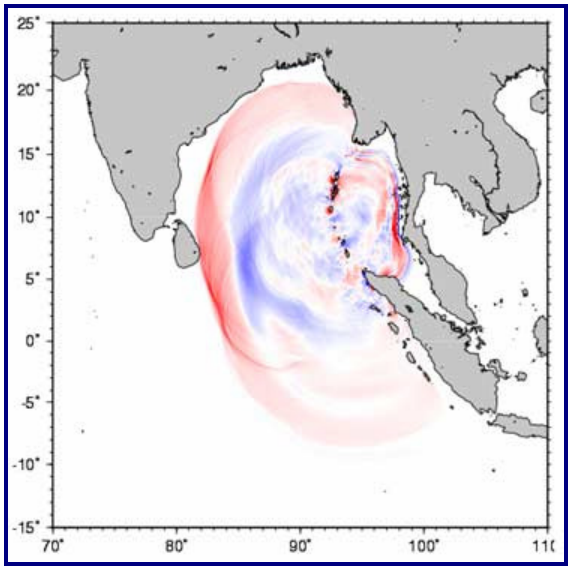

FIGURE 16: THE TSUNAMI AFFECTED MANY NATIONS; REBUILDING DEVASTATED COMMUNITIES WILL REQUIRE COORDINATION AMONG THE LEVELS OF GOVERNMENT

National-Level Recommendations

Bring in technical experts. In all four countries discussed in this report, an infusion of technical experts is needed at national, provincial, and district or local levels to provide *coordination* for transitioning from relief operations to reconstruction and for project implementation.

Finalize national-level plans. Master plans at the national level should be finalized and approved in order for local-level implementation planning to begin. Indonesia has adopted its *Blue Print for Reconstruction*, and the government of the Maldives has put in place a plan that builds on its existing "Safe Islands" and economic development programs. Sri Lanka is prepared to implement its master plan, and Thailand's recovery is being planned at the local level.

Include the appropriate level of specificity in reconstruction plans. All of the countries' plans should be accompanied by general spatial plans and decisions on mitigation policies, including coastal set-backs and building standards and the locations of major regional infrastructure systems that will be built by the national government. These infrastructure systems include roads, bridges, railroads, power plants, hospitals, and waste and debris disposal sites. In addition to considering infrastructure, all governments need to accelerate efforts to verify or restore land-ownership records. Building standards should be adapted to local materials and needs, then promulgated by the appropriate authority.

Prioritize reconstruction projects. The national governments should give high priority to rebuilding regional infrastructure and government services such as intercity roads, railroads, communications and power systems, and hospitals. The national governments should also take ownership of debris clearance and disposal by developing special plans to ensure that debris disposal sites have appropriate environmental and sanitation safeguards. National-level contracts should be let to employ modern technology to render and dispose of debris after its potential for recycled materials has been exhausted.

Track relief funds and resources. National governments must also give priority to developing mechanisms to ensure accountability of funds and tracking resources allocated to various localities and projects.

Recommendations for Emergency Management Systems

All of the affected countries should take steps to improve their emergency management systems. This includes establishing:

- A national emergency management plan that considers all possible disasters, natural or man-made
- A system of trained professionals on the national and provincial levels supported by appropriate facilities and equipment and communication systems that will survive and operate after a disaster
- A disaster warning system for the coastal regions. Many nations are supporting international tsunami detection systems. This is a step in the right direction; however, an effective early warning system should also be put in place in coastal regions to alert citizens about all disasters and inform them of appropriate safety precautions. Solar-powered sirens with voice-over capability should be considered for the system, which should also include simple radios for communications to boats at sea
- Transportation must be available for evacuation when necessary
- Local programs to organize and train government officials and volunteers for emergency management for response to all disasters

Local-Level Recommendations

Create community buy-in. A consultative process that takes into account the needs of local communities involved in reconstruction should be organized to create "buy-in" at the local level and to convince people that progress will be made. A capable and respected person should be identified as the principal coordinator for activities at provincial and district levels and in major communities.

Draft local plans and involve the community in the planning. Detailed, long-term local plans should be drafted in consultation with citizens and parties in affected areas. Priority needs should be identified.

Resources, including local skills, should be assessed and shortfalls identified and reported to the national government. In developing plans and assessing needs, special attention should be given to:

- Reconstruction strategies to reduce future vulnerabilities to disasters
- Strategies to reinforce a sense of community and place, with respect for the cultural values of the population
- Special needs of women, children, and marginalized populations
- Sustainable development; communities should be as self-sustaining as possible while balancing the interests of environmental protection, economic development, and social equity
- Modern technology to produce affordable, maintainable and culturally appropriate solutions to the needs for housing, sanitation, clean water, solid waste disposal, communications, fuel, and electric power

Establish emergency operations centers. An emergency operations center that is staffed with adequately trained personnel and is well-equipped with communications and information technology should be established in the disaster areas. Most probably, one facility at the province-level in Thailand, Sri Lanka and Indonesia would be sufficient with satellite offices in each district or major community.

Expand reconstruction projects. Temporary housing projects already underway should be expanded to ensure all those in need have safe and comfortable quarters while permanent housing is in the process of being built. People

cannot continue to live in tents during the monsoon season. Common areas for cooking, eating, and other activities should be built. Conditions in these facilities should be appealing enough so that residents do not participate in ad hoc rebuilding that is inconsistent with government master plans and policies. In addition to addressing housing issues, more temporary schools should be built and community services provided to help maintain the community identity and cohesion that might still exist among the displaced population.

Get the community back to work. There needs to be a more organized effort to get people back to work. These efforts should be organized and managed for each employment sector at the provincial level and should be organized based on the characteristics of major communities and regional economies for implementation to be successful. Training programs should be designed and implemented aimed at addressing the needs of replacing lost healthcare personnel, teachers, and hotel workers. Villagers should be trained to construct houses and other buildings to provide support for their families and to put money into the economy. The displaced population should be viewed in a positive way. They represent a huge pool of talent and skill that can be easily transferred to many of the necessary reconstruction activities.

Special attention should be given to:

- Getting cash in the hands of citizens to address their personal needs and stimulate the demand for goods and services; this effort should be accomplished by “cash for work” programs to the fullest extent possible
- Replacing lost tools and equipment supporting micro- and small businesses
- Repairing and rebuilding tourism facilities; disseminating information on their operational status; and marketing them internationally; this is particularly important to Thailand, Sri Lanka and The Maldives

FIGURE 17: GETTING COMMUNITIES BACK TO WORK WILL STIMULATE THE ECONOMY OF THE REGION

The Role of Public-Private Partnerships in Successful Reconstruction

All of the steps discussed above, even those that are primarily the responsibility of national governments, can be supported by public-private partnerships. These partnerships should be created among the private sector, the governments in the affected regions, NGOs, and donor countries to accelerate reconstruction on a community-by-community basis. The following section suggests several ways the private-sector can get involved.

Private-Sector Involvement

Based on the conditions we observed, the James Lee Witt Associates team recommends an approach that not only supports specific projects or donating money or materials, but gets directly involved in the most critical need of all—the capacity to coordinate reconstruction efforts effectively and build the capacity to respond to the next disaster.

Because it is probably not possible to offer all these services to all countries, the offers should be made selectively where the need is recognized, the likelihood of success is greatest, and where the governments are eager to receive and support the offers. It is essential that mechanisms be designed into the projects to ensure that specific, attainable objectives are realized and that strict accountability is assured. Progress should be reported to donors, and the undertaking should be fully documented and evaluated.

Strengthening National Emergency Management Capabilities

Over the long term, these countries must improve their national capabilities in emergency management. U.S. businesses could provide technical assistance to the national governments to strengthen their national emergency management systems for all disasters, natural or man-made, including:

- Improving national plans and legal authorities
- Establishing regional emergency operations centers including communications systems that function during a disaster
- Designing nation-wide training programs required for emergency management personnel
- Designing national emergency warning system for coastal areas and boats at sea

Opportunities for Public-Private Partnerships

The private sector in the U.S. could champion the implementation of public-private partnerships by funding and organizing them. Some areas where such partnerships could be especially effective are the following:

- Training people in the communities to participate in reconstruction
- Providing engineering and architectural technical advice and assistance for rebuilding infrastructure
- Constructing specific infrastructure projects
- Replacing boats, animals, or small equipment to restart businesses.

The restoration of livelihoods to all the affected communities is one of the greatest needs of all. If the ingenuity of U.S. businesses could be focused on this problem and the effort could be organized efficiently, much could be accomplished. U.S. business councils and chambers of commerce are dedicated to securing the conditions in which businesses can thrive. This same principle would be valuable in communities that are struggling to recreate those conditions.

Demonstration Projects

Perhaps some demonstration projects could be designed and executed through the "adopt-a-village," "adopt-an-island," or other public-private partnership arrangements. Examples of suitable demonstration projects are discussed below.

Re-establish a central marketplace. This project would focus on constructing a marketplace where vendors can sell and consumers can buy. This could involve a partnership among U.S. business councils, university students in graduate economics and cultural studies, architects, local business owners, international aid groups specializing in economic development, and other related groups.

Establish local business councils. This project would require technical assistance from a "sister council" in the U.S. as economic activity in the region re-emerges.

Create new business sectors. This project could include creating business sectors and perhaps individual businesses, which would meet local needs using local skills and materials. These projects, especially projects involving creating new business sectors, could serve as a testing ground for U.S. companies to adapt advanced technology products for application in developing countries. These businesses would respond to a local or regional demand and, therefore, be sustainable. Some examples of such projects include converting bio-mass to energy or fertilizer; making building materials using renewable resources; establishing new processes for preserving and packaging food; using micro-systems for water purification; and creating ceramic kilns that burn alternative fuels with low air pollution emissions.

Adopt a business sector. This project involves adopting a sector and organizing the donation of supplies and equipment to help jump-start that business sector in several communities. The most important sectors are tourism, fisheries and agriculture.

Adapt building codes to current needs. This project provides support for the International Code Council to work with the local governments to adapt international building codes to accommodate local materials and needs and provide the required training for implementation and enforcement for local officials.

FIGURE 18: RESTORED LOCAL MARKETPLACE

Reconstruction Project Support

On a case-by-case basis, technical assistance could also be offered from several U.S. business sectors to support critical reconstruction project areas such as:

- Community planning
- Adoption of building codes
- Housing construction
- Appliances and furnishings
- Local fabrication of building materials
- Infrastructure projects (perhaps through “adopt-an-infrastructure” programs)
- Debris clearance and disposal
- Environmental protection

Technical assistance should also be provided in the form of fully-funded expert assistance to support a coordination system for planning. A hierarchy of coordinating officers at the national, provincial, and local levels responsible for reaching consensus on local reconstruction plans that are consistent with national master plans should be established. Coordinating officers should also be responsible for implementing the plans by requesting resources from higher levels in the hierarchy and for allocating resources according to the plan. Additionally, they will track mission assignments of all parties working in the region. Facilities, equipment, and communications and management systems should be developed to support the coordination system.

Summary

These are only a few examples of ways the private sector can get involved in meeting some of the most urgent needs in the countries surveyed. Most of these projects would require an agent or representative in country to identify an appropriate local organization to manage the project through a grant or contract.

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Specific Projects to Consider Supporting

In addition to the project areas discussed previously, we identified several specific projects in the countries that we visited that are worthy of support. They are described on the following pages.

Thailand

Rajaprojanugroh Foundation
The King's Foundation has donated 250 acres to build a boarding school for orphans and a tsunami learning center as a memorial to tsunami victims. The proposed plan includes a shelter to be a safe haven for people in time of emergencies. The learning center could contain a training center equipped with video conferencing for emergency management and preparedness and could become allied with an American university with an emergency management curriculum. The foundation has requested technical assistance to design and to implement the master plan.

Phang-nga Village
In Phang-nga Province, there is an effort to rebuild a village some distance from the coast using elevated housing led by a Rockefeller Foundation Fellow who speaks Thai and has a degree in mechanical engineering from MIT. Eighteen houses are currently under construction, with a request for assistance to build the remaining five. The government's assistance has yet to reach this village. This community is quite strong and united, strong enough to help their neighbor once they are on their feet. This village in Phang-nga Province is an example of community-sustainable development.

Phuket Province
Following the tsunami, Udamsak Uswarengkura, Governor of Phuket, immediately assembled an emergency management team and established a provincial command center. The obstacles they encountered led him and his team to outline projects which will assist Phuket Province to recover from this unprecedented disaster and to be better prepared for the future. Not only will they build back better for the citizens of the region, but they believe these steps will greatly enhance tourist confidence in the area and play a major role in restoring that essential industry.

FIGURE 19: PHANG-NGA VILLAGE RECONSTRUCTION

The team in Phuket Province has requested technical assistance and financial support for the following:

- A project to provide vocational training and support for small businesses and entrepreneurs whose businesses were destroyed by the tsunami
- A project to establish an early warning system for tsunamis and other emergencies including training for appropriate personnel and for equipment
- A project to establish the Southern Command and Communication Disaster Center to train personnel in emergency management procedures with appropriate equipment and technology for all hazards
- A project to restore public utilities such as clean water distribution systems; electric systems, including electric generators for blackouts; critical infrastructure, such as bridges and piers; and telecommunication systems that can withstand disasters
- A project to recover the natural environment of the land and sea, including coastal ecological recovery, coral reef recovery, long-term pollution and waste management on land and sea, and flood management
- A project to provide public health, both physical and emotional support for tsunami affected areas in Phuket and to provide medical support for future disasters
- A project to provide support to orphans of the tsunami with an annual living allowance and funding for education through college

Sri Lanka

Sarvodaya Shramadana Movement
Another project requesting financial support is the Sarvodaya Shramadana Movement, a Sri Lankan foundation working on community replacement projects. They have committed to build 17,000 houses in 226 villages in a year, at $5,000 each, for a total of $85 million. They are trying to raise the money so that villagers can be trained and be paid in cash to work. They also need technical expertise and tools.

Kosgoda Village Housing Construction
Leo Burnett Solutions Inc., a Chicago-based advertising company with a branch in Colombo, has adopted Kosgoda, a village of 69 homes. The employees of Leo Burnett have hired a surveyor, and they have marked boundaries and each plot. They have researched land titles, certified deeds, and verified ownership. They have also hired a local contractor to do the construction, which will take approximately six months. This team is constructing 500-square-foot homes at $5,000 with no appliances or furniture included in the cost. They have opened a bank account to receive and disburse funds and have engaged Ernst & Young to audit it. They are raising funds to complete the project.

FIGURE 20: SRI LANKA NEEDS SUPPORT IN RECONSTRUCTING ITS COMMUNITIES

The Republic of the Maldives

Comprehensive Reconstruction Plan
The private sector should support technical assistance to implement the comprehensive reconstruction plan developed by the Maldives. The plan has thus far been under-funded by donor pledges.

Indonesia

Technical Assistance for Implementing Blue Print
The private sector should provide funded technical assistance to the government of Indonesia to set up a Provincial Coordinating Officer and a supporting emergency operations center in Aceh to manage the local relief and implement the country's master plan for reconstruction.

Women's Political Caucus of Indonesia (KPPI)
A multi-partisan organization, KPPI has trained women from political parties, civic organizations, government, trade unions, academia and the media. KPPI was also instrumental in establishing laws to increase women's representation and leadership in political parties. The Caucus has a branch in Aceh, but lost some of its members in the tsunami. KPPI needs support to rebuild its provincial branch and expand its presence into the 21 cities and counties in Aceh. The group also plans to work to foster women's participation in the decision-making and implementation process regarding reconstruction. In 2005 KPPI received the inaugural Madeleine K. Albright Grant awarded to organizations around the world that create greater roles for women in political and civic life.

FIGURE 21: *THE BLUE PRINT* WILL BE IMPLEMENTED TO COORDINATE HOUSING RECONSTRUCTION PROJECTS, MAKING TENTS AND OTHER TEMPORARY SHELTERS OBSOLETE

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Conclusion

Never before has the world seen so graphically the lives and livelihoods of so many people literally washed away. Private American citizens and businesses have been extremely generous with donations and pledges of support. The immediate response of public and private organizations worldwide is unprecedented. Resources have been thrown at the situation rapidly.

Although the basic human needs of the majority of tsunami victims have been met, many are living in uncomfortable and sometimes unsanitary conditions because aid has not been distributed evenly in all cases. There has been a lack of overall coordination and some duplication of effort. Without a clear plan for their futures, victims are experiencing a lack of patience as they continue to see little progress in regaining their livelihoods, rebuilding their homes, and reestablishing their communities.

The tsunami-affected countries have entered a critical phase. The massive cost and effort involved in reconstruction requires more organization and coordination. Unfortunately, most countries are not adequately equipped with the technical expertise needed to complete reconstruction efficiently and effectively. This is a gap U.S. businesses could help fill.

The tsunami disaster, while tragic, presents a golden opportunity for the U.S. to “do it right.” The goal should be to improve living conditions in the countries affected—not simply ensuring that their lives return to normal. If corrective action is swift, one or more of these countries could be a model for the future of how reconstruction should be managed—to *build back better* and create safer and more sustainable communities.

The U.S. private sector, especially the business community, could play a crucial role in the reconstruction of the regions devastated by the tsunami. With special expertise in building entrepreneurship, facilitating markets, and skills training and new tools and equipment, businesses could help victims restore their livelihoods. Business resources should tap their vast technical capacity to coordinate the multiple projects involved in reconstruction and help these countries to improve their emergency management capabilities.

The U.S. business community would be more effective in maximizing the impact of its tsunami assistance if resources were pooled and strategically targeted through public-private partnerships in a few specific countries or communities. A project team should be created to provide technical assistance to selected countries affected by the tsunami and serve as the conduit for integrating business sector participation into newly created public private partnerships. This team would be an extremely valuable resource to any country interested in assuring foreign donors that the money was well spent. The team could assemble a compendium of best practices to publicize the successes resulting from this pioneering approach.

The U.S. businesses that join to support post-tsunami reconstruction projects will demonstrate to the world the best that America has to offer—innovative approaches, first class technology, expert talent, integrity and accountability, and most of all, generosity and compassion for the global community.

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