

# FOR THE LEAST AMONG US

New  
Approaches to  
Refugee Care

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*by Cameron M. Burns*



On December 26, one of the largest earthquakes in modern history ruptured the ocean floor off the coast of Sumatra, creating a series of building waves—a tsunami—that would travel west, nearly 7,000 kilometers to the east coast of Africa, and east, to the nearby coasts of Sumatra and Thailand. Within hours the tsunami had inundated communities on both sides of the Indian Ocean, killing thousands in Indonesia, Thailand, Sri Lanka, India, and the Andaman Islands, and dozens more in Myanmar, Malaysia, Somalia, Tanzania, and the Maldives. As the world watched in disbelief, the number of casualties continued to grow. There appeared to be no end to the suffering South Asia would endure.

Since the events of September 11 three and a half years ago, Americans have become more familiar with the tribulations of the dispossessed than they were during the entire previous generation. And now, as millions struggle for survival across South Asia, our attention has been drawn away from the hardships of refugees created by conflicts (in, for example, Iraq and Afghanistan) and by resource shortages (as in the Darfur region of Sudan) to the plight of those imperiled by natural disasters: in this case, a tsunami of historic destructive power.

In any given year, tens of millions of refugees are displaced from their homes in the poor nations of Africa, Asia, and Latin America. As



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sands, even by the hundreds of thousands, in stunningly brief spans of time.

For example, during a three-year period starting in 1990, 100,000 Bhutanese asylum-seekers fled into southeastern Nepal; between 1992 and 1997, Tanzania received 800,000 refugees from Burundi and Rwanda; and between July and October 1994, 730,000 refugees fled Rwanda for Goma, in the Democratic Republic of Congo. One of the most compelling examples of such high-speed mass movement is probably the April 1994 mass exodus of 250,000 Rwandans—fleeing ethnic violence—who crossed the border into remote northwestern Tanzania in two days. Today, we are witnessing several refugee-related

crises, the most heart-wrenching in South Asia, where millions of people (estimates vary greatly) have been displaced. Such forced migrations are incredibly difficult to deal with. Aid workers are pressed to erect tent cities within weeks, even days. Order must be maintained. Water, food, and clothing are needed immediately, then an ongoing source for these basics must be established. Not surprisingly, refugee relief is falling more and more on military commands, which have the skill, discipline, technology, and financial backing to deploy quickly and create order out of situations that might otherwise descend into anarchy. How these refugees are handled, and the way in which their habitations are established, is becoming of greater interest both in military circles and among aid organizations.

humankind proceeds quickly into the twenty-first century, this group of people—like the tsunami survivors who flicker across our screens nightly—could become the most demanding of our attention simply because their numbers are likely to grow. Continuing desertification of sub-Saharan regions, climate change and rising sea levels, ongoing resource shortages and the violence resulting from such shortages—not to mention natural disasters—will all be felt by the poorest members of society first. As of January 1, 2004, the office of the United Nations High Commissioner for Refugees (UNHCR) estimated that worldwide there are 17 million refugees, asylum seekers, and other people “of concern” to the agency; but that number, many aid organizations are quick to point out, might represent only half of all refugees.

Some refugees are dispossessed for only a few weeks or months. Others have been displaced for years. Some have held their refugee status for several generations. The camps that refugees call home can be horrific, which is no surprise. When natural disasters, war, or food shortages prompt refugees to flee, they often do so by the thousands or tens of thou-

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## A refugee primer

Organized refugee care is a fairly new phenomenon. In modern times, the world community began systematically looking at and understanding the plight of refugees at the

end of World War II—when an estimated 40 million Europeans were displaced. In 1951, a UN-convened group in Geneva wrote an international treaty, the 1951 Convention relating to the Status of Refugees, which defined a refugee and outlined “the minimum humanitarian standards for the treatment of refugees.”

Officially, a refugee is a person who “is outside her/his country of origin (or habitual residence, in the case of stateless persons) and who, owing to a well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion, is unable or unwilling to avail herself/himself of the protection to which she/he is entitled.”

Many humanitarian aid workers are quick to point out that the UN definition leaves out quite a few people, notably those uprooted within their own countries, so-called internally displaced persons (IDPs). The roughly one million Afghan IDPs who could not cross international borders in 2000 and 2001 (partly because neighboring countries closed their borders) don’t have the same rights as international refugees, and they often receive little or no assistance. Moreover, many refugees are overlooked by humanitarian efforts because they integrate quickly into local populations, as have many Afghan refugees who fled to Iran and Pakistan. Until the South Asian crisis, certain groups only dealt with certain situations. UNHCR, for example, rarely dealt with refugees of natural disasters, leaving those efforts up to other humanitarian organizations. “This is an unusual step for UNHCR,” acknowledged Jennifer Clark of the agency’s Geneva office. “We usually work with victims of war and persecution.”

A typical refugee camp can house 10,000 people. But camps may have hundreds of thousands of residents, as was the case with Rwandan camps in the Congo in the mid-1990s—one of which grew to 600,000 people. Refugee camps are supposed to be temporary, but as unresolved conflicts often make it difficult for refugees to go home, the camps can remain for decades.

The camps where refugees wind up are

usually in poor nations; they impose an enormous burden on local societies, economies, and ecosystems, leading to a host of problems. Armed militia and guerrilla factions sometimes infiltrate camps and terrorize refugees; violence against women, children, and other vulnerable people is common. Sometimes those hired to run the camps come from a local population that has been at war with the refugees, prompting severe mistreatment. Locals outside the camp often resent the international aid that refugees receive and steal whatever they can from the camp inhabitants. Sometimes the refugees themselves don’t trust the aid—as workers in Sudan found when refugee mothers refused to feed their starving children because they feared the food was poisoned.

Refugees are sometimes inadvertently given food, supplies, and fuels that break cultural or religious mores. Sometimes they’re given foods that require considerable cooking, prompting energy-related problems such as deforestation. And even the logistics of supplying aid to refugees can create problems that compound the crisis originally addressed.

“When refugee camps are set up,” says U.S. Navy Commander Eric Rasmussen, an intensive care unit physician who works within humanitarian relief operations around the globe, “the basics of food, water, shelter, and safety must be delivered just as quickly as possible or lives can be lost. But disconnected coordination can cause seemingly foolish problems that are often invisible until you work in the camps.

“At one camp in Africa in the mid-1990s,” Rasmussen says, “one aid agency delivered drinking water from five-centimeter pump spouts while another agency provided plastic water containers with three-centimeter openings. These particular refugees weren’t familiar with funnels, so the simple mismatch resulted in thousands of gallons of spilled water. The spilled water created a mud hole. The mud hole was fixed when a different aid agency laid a cement slab with a sluice leading to a shallow collecting pond for the spillage, rather than coordinating a fix for the spout-container mismatch. The result for the

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## ARCHITECTURE'S ROLE IN SUSTAINABLE SETTLEMENTS

**N**ot surprisingly, the rapidly burgeoning world of “green” architecture is deeply involved in integrative relief-construction design. The cost of poorly thought-out construction is so high, while the benefits and savings (in operating expenses, energy savings, human productivity, etc.) derived from properly designed structures can be enormous.

Indeed, as the 1990s came to a close, the number of built-environment designers working on humanitarian issues seems to have increased dramatically so that today, numerous organizations are doing everything from designing shelters out of metal shipping containers to studying the structural possibilities of all sorts of recycled materials.

“To achieve lasting temporary shelter, sustainable solu-

tion Shigeru Ban’s experiments in building with recycled paper products after a 1995 earthquake in Kobe, Japan, left hundreds of thousands of people homeless. Using brown cardboard spindles from paper towels, used beer crates, and tent material, Ban designed safe, fireproof, weatherproof homes for earthquake victims that were reportedly still standing years after the tectonic event—and they were beautiful to boot!

Sinclair insists that sustainability be integral to any construction response to a crisis. “Certainly in the initial building of a camp it is not high on the priority list,” he says. “However, as camps are in existence for a number of years, the need for sustainable solutions increases.”

UNHCR is also promoting mud brick construction (as opposed to wood frame shelters) in Kenya, Zambia, and Tanzania, and has plans to expand into Rwanda in 2005. And Builders Without Borders pursues a range of architectural efforts, from running workshops on low-income straw-bale housing in Mexico to hosting natural building exchanges with its Siberian counterparts to developing earthquake-resistant straw-bale houses in Turkey.

Finally, there are those mulling over the very existence of camps and what they’re really all about. Whole-system thinking, after all, means carefully scrutinizing everything, including whether the “system” should exist in the first place.

“It may be interesting to note that the Refugee Convention doesn’t mention the word ‘camp’ once,” says Merrill Smith of the U.S.

Committee for Refugees, an organization that is working on the problem of “warehousing” (allowing refugees to languish, without purpose, indefinitely). “It was drafted by the victorious powers of World War II with European refugees in mind. Encampment had something of a bad name back then, and there was no enthusiasm to ratify it as an enforced lifestyle. When the last European camp of the era was closed, it was ceremoniously burned to the ground. So the founders drafted essentially a bill of rights for refugees to live as normal, decent, and self-reliant a life as possible until their situations could be resolved.” Unfortunately, as Smith notes, a lot of these “situations” remain unresolved.

—Cameron M. Burns



COURTESY OF BUILDERS WITHOUT BORDERS

tions are the most cost-effective in the long term,” notes Cameron Sinclair, a British architect based in New Jersey and the cofounder of Architecture for Humanity, an organization that works in a variety of challenging settings to “promote architectural and design solutions to global, social and humanitarian crises.” Sinclair travels the globe, lecturing on the latest design innovations for disadvantaged people, and at the same time hosts online design competitions for projects in various locations. (This author recently had the privilege of helping judge a Sinclair competition for a combined soccer field and health facility in Somkhele, South Africa.)

One of Sinclair’s favorite stories tells of Japanese archi-

refugees was a mosquito-infested pond thirty feet from the water pump and a 40 percent malaria rate in those who used that site to pump their drinking water. Clearly, this is a design problem.”

Even local governments can throw up obstacles. At one African camp, aid workers wanted to initiate several projects. The national government—which had been charging rich Western humanitarian groups large sums simply to gain access to refugees within its borders—demanded \$20 million from the aid workers in exchange for access. The aid workers refused and eventually gained access to the camp, but such extortion is one more obstacle to delivering emergency aid to those most at risk.

## The shift in humanitarian aid work

In the past decade or so, humanitarian aid work has changed in several ways. First, aid work became more proactive. “During the Cold War, if you had displaced persons, agencies tended to defer to the local government,” says Larry Thompson of Refugees International. “In recent times, the UN and others have looked to expand their coverage of people. Today, there is certainly a more concerted effort to take care of IDPs.”

Indeed, the many brave souls who do humanitarian work are now pushing their way—often quite forcibly—into areas they previously would have avoided, refusing to bow to bureaucracy and the political machinations of host countries.

Second, the past decade has seen humanitarian aid work focus much more on the environment and environmental issues. This trend is likely influenced, at least in part, by UN-related activities that jointly addressed economic development, resource use, and, ultimately, humanitarian aid.

The United Nations Environment Programme (1972) and the Rio Summit of Sustainable Development (1992) both contributed to the drafting of UNHCR’s Environmental Guidelines (1996). The guidelines laid out the agency’s operational policies and principles, while acknowledging that “the

negative environmental impacts associated with refugee situations must be better understood and dealt with,” and that UNHCR directives do not “take a broad enough view of environmental impacts and embodies an uncoordinated, sector by sector approach to resulting problems.”

At the August 2002 World Summit on Sustainable Development in Johannesburg, the UNHCR regional representative in Pretoria, Bemma Donkoh, called for humanitarian projects to include refugees as “agents of development.” He underscored the need to integrate sustainability principles and displaced populations, partly as a result of the tremendous environmental destruction visited on several African nations during the mass refugee movements of the 1990s. “The tragedy of forced human displacement must not be compounded by further damage inflicted on the environment of those countries that so generously give a home to the refugees,” Donkoh argued.

This increased emphasis on how displaced people and their settlements affect natural resources also began, in the mid-1990s, to attract members of the so-called sustainability community. NGOs, designers, architects, engineers, biologists, foresters, energy experts, and others, who are not necessarily focused on environmental protection and restoration per se, seek wide-ranging solutions that actually solve multiple problems at the same time.

This type of approach has several names. In terms of refugee care, though, perhaps the best is “whole-system thinking.” Striving to provide integrated benefits, this approach embraces a deep examination of every part of a system, including components and external players, inputs and outputs (oftentimes wastes), and the effects on other systems. A simple example might be a pond system that cleans polluted water, produces food, offers shade, moderates hot temperatures, and offers a beautiful setting.

Properly combined, today’s best whole-system practices can often provide for basic human needs—clean water, food, sanitation, shelter, security, light, refrigeration, telecom-

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munications, medical care, and education—in ways that support prior populations, check the spread of poverty-inducing conditions, and restore vital habitat and infrastructure. Moreover, applying key insights from myriad disciplines can help create a sound sociology, an entrepreneurial microeconomy, and a sense of dignity and self-worth.

Combining many proven solutions, normally deployed only singly, should yield very important synergies. Making the skills and techniques scalable and portable—so



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refugees can take them home to help with rebuilding—could make repatriation likelier and more successful and create a nucleus for local, regional, and national development. And if this can be done in refugee camps, it might also help the two billion or more other

people living in dire poverty.

Rasmussen says the sustainability community's approach of understanding an entire system before attempting a "solution" could also be appropriate in refugee settlements. In mid-February 2002, the Rocky Mountain Institute (RMI), a "think and do" tank located in Snowmass, Colorado, partnered with Rasmussen (today an RMI senior fellow) to rethink refugee-and-displaced-persons settlements from scratch. The United States had recently invaded Afghanistan following the September 11 attacks on New York and Washington, and millions of people had been displaced throughout the region. Wondering if there might be a better way to organize and provide for refugee camps, Rasmussen and others held a four-day workshop to discuss the sustainability community's role in displaced populations.

A number of other groups were involved in the event, including UNHCR, Refugees International, the UN Development Programme, the World Food Programme, the U.S. State Department, the Departments of Energy and Defense, as well as many NGOs, government departments, and individual specialists.

### What does a sustainable approach look like?

So what should a nation do, if, say, it suddenly faced a three- or four-month-long influx of a hundred thousand people into a community, all of whom needed immediate help? Or two hundred thousand people? How about half a million?

The eighty-four workshop attendees formed working groups covering all the issues of concern to UNHCR—energy, site, water and sanitation, communications, education, health, economic development, food and nutrition, construction and shelter—and were assigned to envision three projects that could be implemented within six months. They were given a theoretical location for their efforts: the community of Spin Boldak, where an encampment formed in late 2001 with nearly ten thousand IDPs (mainly women and

children) near the Afghan-Pakistan border. (At the time, it was envisioned that ideas generated from this workshop might also be applied along the U.S.-Mexico border, in rebuilding Kabul, and in other harsh settings.)

While none of the results were, admittedly, revolutionary, they did certainly point to the future of displaced population care and treatment. Take food, for example. It arrives in all sorts of packaging, which is simply burned or discarded. But boxes of aid materials could be impregnated with crop seeds and spores of fungi that help them gather nutrients and hold soil. Renowned mycologist Paul Stamets led a discussion about exactly what a food container should be, and the discussion ranged from box panels designed to fit a region and season, ready to plant and create a kitchen or market garden, to “seed boxes” delivering a “school-in-a-box.” The latter could supply refugees with everything from camp information, learning materials, and gardening supplies to solar-powered toys and information sources.

Even some of the simplest—but currently unapplied—ideas could be helpful in camps. “The first project our group developed was an assessment of the refugees themselves, an inventory of the human resources,” noted RMI’s Michael Kinsley, facilitator of the Economic Renewal Group. “There’s a lot of brainpower that comes into these camps, and camp organizers should be tapping into that resource.”

Not only does an assessment provide humanitarian agencies with information about the population, Kinsley explained, it could empower the refugees themselves, by building self-esteem and getting them involved with camp projects. It also helps prepare them for their return home. And if the inventory goes on a “smart card” rather than a simple ID card, it can provide a secure personal record (sometimes including microcredit qualification upon registration) and can help jump-start local commerce.

The individual projects the workshop produced were impressive, but it was the way in which complementary knowledge and experience were woven together that made this



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design process unique. A poignant example came from the workshop’s Energy Group, which comprised technology and fuels experts, solar and adobe experts, and experienced aid workers. On their first day, group members considered how to get the most heat and light from various fuels, and which fuels were appropriate. They came up with some good ideas, but the arrival of former Afghan refugee (and current southern California businesswoman) Fauzia Assifi and an Afghan-experienced nurse-anthropologist caused the group to refine good ideas into great ones.

Afghan families, Assifi explained, are accustomed to heating their feet and lower legs by sitting together (*sandelei*) around a table, covered with a heavy quilt, with a small charcoal brazier (*manqal*) underneath—an arrangement similar to the Japanese *kotatsu*. The brazier, containing coals covered with ash, stays hot for many hours. Afghans cook, eat, and share each other’s company around the *manqal* and often go to sleep in the same positions, leaving their legs under the brazier-warmed quilt and stretching out on their sleeping mats.

Building on Assifi’s information, the

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Energy Group decided that a new type of brazier insert might be in order. Fueling it—and an efficient stove/pot combination for cooking—with LPG (bottled gas) could greatly decrease the environmental damage resulting from cooking with wood (and then trying to heat people with the same cooking fire). It could free up the excessive fuel-gathering time required of women and children, so they could further their education or earn more, and also prevent damage from land mines and attackers while foraging for firewood. It would eliminate indoor smoke and therefore eye damage, which is chronic in Afghanistan, without many of the risks of kerosene. A trickle brazier that uses only a tiny amount of LPG would thus provide personal warmth to family groups in the evening and at night in cold climates, in a way that reinforces family cohesion and traditional practices.

Such new technology might stir the interest of gas, oil, and LPG companies—such as those that have recently emerged in Afghanistan—which could see new markets created through technologies introduced for refugees.

## Applications in the field

RMI's Sustainable Settlements workshop was not undertaken to produce floor plans for camp buildings and design drawings for new cooking devices; rather, the intent was to explore ways of thinking about settlements, displaced people, the land, local residents, and just about everything else related to human dispossession. Its purpose was also to affirm the efforts of those already in the field and applying sustainability on the ground. The workshop's influence on specific projects is not entirely certain; and while it would be nice to say the event gave heightened priority to humanitarian care, there is much evidence that this new direction in aid was already under way.

Today, the “sustainability” view is creeping into projects and practices of nearly every mainstream aid group, ranging from organizations such as the World Food Programme to UNICEF. More than a dozen organizations interviewed for this article pointed to projects that cross disciplinary boundaries and are aimed at solving multiple problems with a sin-

## SOUTH ASIA: A DISASTER, AN OPPORTUNITY

**W**hile a tragedy of unimaginable magnitude, the disaster in South Asia is an opportunity for the sustainability community to implement the kinds of sustainable development ideals that are touted by officials with the United Nations Development Programme and other global NGOs: to build the safest and greenest buildings, develop the healthiest communities, grow the most ecologically sensitive foodstuffs, and make the most earth-friendly products. As Lynne Hale of the Nature Conservancy noted, “We have an unprecedented opportunity to do reconstruction in a way which doesn't repeat our mistakes.”

Of the myriad professionals who share interest in cross-disciplinary, multiple-problem-solving solutions, it may be those involved with green or sustainable building design who are taking the first steps, with good reason. Infrastructure in the disaster zone is almost nonexistent. Where they existed in the first place, water, electricity, and sewer lines

are gone, and this infrastructure must be re-created over the next months and years. New houses—real houses—will need to be built to replace the temporary shelters that are currently in use. Hospitals, schools, government buildings, temples, and all sorts of commercial structures must be rebuilt. In all this construction, safety from future tsunamis must be a prime consideration. This is an incredible opportunity to demonstrate the value of resilient, distributed systems. These are all areas where those in the sustainability community have core competencies and primary foci.

“It looks like we are going into southern Sri Lanka to partner with local communities and implement a few long-term sustainable building initiatives,” noted Cameron Sinclair of Architecture for Humanity. Project Re:Build, to which Sinclair is referring, will aim to “utilize locally based construction techniques, allowing immediate community participation, and innovative sustainable initiatives to

gle idea or activity.

According to Larry Thompson, an advocate of the sustainable approach who visits dozens of settlements annually and reports on the plight of refugees (he just returned from Sudan), solar cookers and energy-efficient stoves have been deployed by various agencies (including World Vision, GTZ, and others) in recent years in Sudan, Kenya, Chad, and other African countries—with a host of benefits to the refugees. And, Thompson reports, there are various ongoing water projects that revolve around sustainable ideals.

“We minimize socially destructive impacts by hiring local staff and procuring most supplies locally,” added Martha Naegeli of the American Refugee Committee, noting that her organization employs a variety of cross-disciplinary techniques to reduce refugees’ impact.

UNHCR and the World Food Programme now consider it fairly standard procedure to use sacks left over from food shipping to start small family plots. “Filling the bags with soil and planting seeds can be an efficient way to garden in arid environments,” says Jennifer

Clark, a spokeswoman with UNHCR, “as the bags help retain water and can be placed in the shade to reduce evaporation.”

Not only do the plots produce food, they temper the climate, produce fresh air, add beauty, provide employment and pride, and reduce boredom, for both refugees and their successors. The gardening efforts can even counter xenophobia.

“The former Mafaza refugee camp blends well into the texture of the town,” according to a UNHCR article about one farming-related infrastructure project in an eastern Sudan camp that formerly housed up to a million Eritrean refugees. “It looks more like another neighborhood than a separate structure. The clinic that was used by both refugees and Sudanese now serves the local population.”

Today, integrated solutions are so important to UNHCR that it has a department essentially devoted to sustainability, the Technical Support Section (TSS), which focuses on environment and other technical issues as well as myriad programs intended to mitigate the environmental impact of refugees.

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rebuild an entire village which has been devastated by the tsunami,” according to Sinclair. This project—likely to take place in the Hembanthota District of Sri Lanka—is not just about building homes; project organizers hope to get an entire community to work together to rebuild itself, with special emphasis on the public and community facilities (markets, clinics, meeting areas, etc.) and the relationships between people doing the work.

“This form of architectural acupuncture creates a catalyst in which communities are able to grow and build—eventually towns and villages will re-emerge,” Sinclair noted. “Once the project has been completed, the finished urban planning and architectural schemes will be made available via the Creative Commons Developing Nations License for other NGOs and local communities to adapt and replicate throughout Sri Lanka—and eventually, other regions affected by this tragedy.”

Other groups are already discussing the use of everything from such topics as using nontoxic and recycled materials in rebuilding infrastructure, to using selecting locally sourced and renewable building products, to and designing





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“Some of the areas being looked into are agroforestry, permaculture, alternative energy (biogas, solar cookers, briquettes, peat, etc.), energy-efficient stoves, water and soil conservation, environmentally friendly shelter materials (mud bricks and stones), assessment, and development of monitoring and evaluation tools,” says Clark. “A number of interventions have been or are being tested in collaboration with other sectors. For example, the use of mud bricks for construction of shelters; backyard gardens linked to the use of waste water, food, and nutrition, as well as afforestation; energy-efficient stoves using empty World Food Programme oil tins for stove casing; animal husbandry for income generation linked to the use of manure for soil fertility improvement.”

### Refugee care in the future

The efforts and ideas recounted here represent the absolute tip of the iceberg in terms of refugee care—both problems and solutions. The problems are so vast, so all-encompassing, and so dangerous that safely helping

buildings and communities that are safer and that require minimal energy and water infrastructure.

The field of green building is a natural in an instance like this, but there are indications that other sustainability-oriented experts and organizations are getting involved. For example, an organization called SERRV International, a nonprofit that promotes trade and development in developing regions and does considerable marketings of sustainably-crafted products, is already examining how it can help stimulate local economies in South Asia.

“While emergency relief is absolutely critical—and we’re seeing a truly amazing job being taken on by highly respected aid organizations—we also recognize that these survivors will need our support over a long period of time to rebuild sustainable lives,” said Bob Chase, SERRV’s president and CEO, noting that SERRV hopes to “help create jobs, community infrastructure, and a sustainable, secure economic future.”

And though other organizations aren’t quite certain where their talents will be best applied, they know trans-ideological thinking will play a role.

“While we have some leads on possible projects in the area hit by the tsunami, we do not have any definite projects yet,” said Meg VanSciver with Engineers Without Borders’ U.S. office in Colorado. “With the scope of the disaster so broad, it is necessary to take some time to make sure that the projects are the most beneficial for the communities.”

The notion of rebuilding using natural principles (notably biomimicry\*) is not limited to well-meaning Westerners. On January 5, in Ahmadabad, Indian President A. P. J. Abdul Kalam addressed the graduating class at Ahmadabad’s National Institute of Design, calling on graduates to design structures that are regionally appropriate and to learn valuable survival lessons from nature.

“There are unconfirmed reports that the tribal population and animals, including cattle, were not affected by the tsunami as much as the other population,” Kalam noted. “We must work towards learning the right lessons even from this disaster, so that our future can be safe. The fishermen of late seem to have been pushed to live closer to the seashore than ever before due to the demands placed by

those in need requires extreme caution from the outset.

It's no surprise then, really, that the sustainability community, with its emphasis on the entire system—not pieces of it—has become involved in many places, and that in other situations traditional aid organizations have embraced sustainability's tenets. In fact, the entire field of humanitarian aid appears to be going through a major growth spurt.

This is not to say, though, that the sustainability community's approaches are the last word. Thompson is quick to point out that despite all the efforts with "integrated" camp design, problems still exist. Though solar cookers have been deployed throughout Africa, wood is still the fuel of choice. "What I've been looking for more than anything else was to get beyond the firewood problem," he says. "Refugees use a lot of it and compete with the locals, and it causes a lot of friction. Bottled gas is still too expensive. A lot of awfully good minds have worked on the firewood issue, but there's still no global solution to it."

Regardless of exactly where exchanges

like RMI's workshop and Sustainable Resources' conferences point, those who work in humanitarian relief will undoubtedly continue the ongoing dialogue, share it, build upon it, and refine it. That's good news because, unfortunately, despite all this creative energy, the plight of the refugee remains one of the world's most pressing challenges, for both developed and undeveloped nations. And while 2003 saw a drop in the "population of concern" to UNHCR (from 20.8 million persons at the end of 2002 to 17.1 million by the end of 2003), the refugee camp is not going away soon. Luckily, many concerned souls are looking for solutions and, whenever possible, putting them into practice.

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tourism and urban development."

As President Kalam alluded in his speech, the notion of a biomimetic tsunami-warning system might not be as strange as it sounds. The *Central Chronicle* in the Indian state of Madhya Pradesh recently reported that five indigenous tribes on the Andaman and Nicobar Islands were able to detect and flee from the coming tsunami using their tribe's "age-old warning systems."

"The tribals get wind of impending danger from biological warning signals like the cry of birds and change in the behavioural patterns of marine animals," ASI Director Dr. V. R. Rao was quoted as saying. "They must have run to the forests for safety. No casualties have been reported among these five tribes."

But there's a bigger picture developing in South Asia as well. At its core, "sustainability" means looking at problems differently, so that they can be addressed more effectively with less damage to all. There are signs that such a paradigm shift is well under way in South Asia.

Organizations that might simply have dropped off bags of food, clothes, and temporary shelters ten years ago are

today rethinking their roles, their and relationships with one another. They are rethinking timing, strategies, and potential pitfalls—and rethinking exactly what it is they bring to the challenge of displaced populations.

As Rocky Mountain Institute architect and principal Huston Eubank noted, "This is a tremendous opportunity to build good examples of green buildings—minimal infrastructure, locally sourced materials, local labor, and all the other good stuff. More importantly, we [the sustainability community] can help organize the reconstruction effort so that good green building principles are used universally. The world is ready for this kind of thinking, and out of this tragedy can arise an incredible opportunity to make lives better in many, many ways."

—Cameron M. Burns

\* Biomimicry is a design philosophy that looks to nature for simple, elegant, non-toxic, solutions to human problems.