War on Hunger

by Amanda Leigh Haag
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In December 2004, the eyes of the world turned toward the tsunami-ravaged coasts of Asia and Eastern Africa. Donations, foreign aid, and emergency health care from all nations poured in to help deal with the loss of more than 200,000 victims and the many homeless and destitute people that the Indian Ocean tsunami left behind.

But each month, 200,000 Africans die from what Pedro Sanchez calls "a silent tsunami," the tide of chronic hunger and malnutrition that sweeps across the African continent. No one is immune: it reaches coastal fishing towns, rural villages, and urban centers alike.

Sanchez, co-chair of the United Nations (UN) Millennium Project's Hunger Task Force, is working to change the way that most people think of world hunger. Once the public begins to realize that the vast majority of hungry people around the world are not starving, but are instead chronically hungry, the course of intervention will change, Sanchez believes.

Acute hunger resulting from famines, wars, and natural disasters represents only a small fraction of the hungry but receives most of the media attention and coverage, according to Sanchez, who received the 2002 World Food Prize. "The stereotypical image we have of an Ethiopian child with flies in his eyes dying in some sort of refugee camp is not representative of the situation faced by over 90 percent of hungry people," he said. "Starvation only accounts for about 8 percent of the hungry people in the world; the other 92 percent suffer from hunger silently, and they die in droves because of malnutrition-related diseases."

Scientists use geospatial analysis to identify pockets of hunger and the geographic and physical causes of hunger.

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(Photographs in title graphic from the World Food Programme and Laura Melo (far left), Debbie Morello (upper right), and Graciela Damiano (lower right). Image of Africa courtesy of NASA/JPL-Caltech.)

Students line up for school meals, made with locally produced foods, at Bar Sauri Primary School in the Millennium Village at Sauri, Kenya. (Image courtesy of Pedro Sanchez, Earth Institute at Columbia University)

In the summer of 2002, UN Secretary General Kofi Annan asked the director of the Earth Institute at Columbia University, Jeffrey Sachs, to lead the "UN Millennium Project." Its purpose was to develop a set of practical strategies to achieve the "Millennium Development Goals" (MDGs) targets set by the world community in the year 2000 for reducing poverty and promoting sustainable development. The project's 10 task forces dealt with the roots of poverty and hunger, including health, water and sanitation, gender, education, and environment. The Hunger Task Force became the team specifically assigned the goal of halving world hunger by 2015 and, eventually, eliminating it.

Through the Hunger Task Force, Sanchez and other experts identified hunger "hot spots" to get a better sense of where poor and hungry people are in the world. Scientists at Columbia University's Center for International Earth Science Information Network (CIESIN) undertook a geospatial analysis that stitched together national census data from maternal and child health surveys at the sub-national level. The task force found 313 provinces or districts in sub-Saharan Africa where more than 20 percent of children under five years old are underweight. Their analysis showed that 80 percent of hungry people in the area they studied live in the hot spot regions.

Next, the team set out to determine the different causes of hunger in various regions and to pinpoint the geographical distribution of malnutrition. Using data from the Socioeconomic Data and Applications Center (SEDAC), such as the "Gridded Population of the World" (GPW) data set, they found that factors such as climatic conditions, geographic remoteness, and elevation were statistically related to the distribution of child malnutrition and infant mortality.

"You're more likely to be poor if you're located far away from the coast or from a road," said Marc Levy, one of SEDAC's project scientists and an associate director with CIESIN. "You're also more likely to be poor if you live in a region that has little rainfall or a short growing season, if you're far from an urban center, or if you live at a high elevation," said Levy. All of these variables assist in diagnosing the causes of poverty, he said.

The precise combination of interventions to address poverty depends greatly on the geographical and physical factors at play in a given area. In sub-Saharan Africa, for example, a growing body of evidence shows that lack of access to transportation networks creates hunger "traps," according to Levy. If someone is far from a main highway, it takes more effort to get out of a poverty trap, so investing in better transportation infrastructure would be a key strategy, he said.

For populations that live in higher-elevation regions, other factors such as soil or growing conditions might need to be addressed first. Yet, at the same time, these populations have the benefit of reduced exposure to diseases like malaria. But the net effect of all these factors can only be understood when you have the relevant data at your disposal, said Levy.

Levy noted an emerging trend: countries that create detailed poverty maps are doing a better job of charting intelligent interventions, since they are able to identify their own hot spots and set priorities where the greatest attention is needed. "This is sort of 'brave new world' territory," said Levy. "It's the first time in human history that people have started talking about global poverty as seriously as they're currently talking about it."

But another darker trend is also emerging: even when there is a plan in place to reduce poverty, many countries do not have the financial resources to meet their goals. And foreign aid to fill that gap is lagging far behind; in some cases, financial commitments from wealthy, developed countries are disproportionately low. In other cases, even where sizeable commitments have been made, the money has not been coming in quickly enough, said Glenn Denning, director of the MDG Center based in Nairobi, Kenya. "So the money hasn't been flowing at the speed it should be, and certainly not at the speed that is needed to achieve the goals of the Millennium Project," said Denning.

Pedro Sanchez and Awash Teklehaimanot, an Earth Institute malaria expert, learn soil science in the Nyando District of Western Kenya. (Image courtesy of Pedro Sanchez, Earth Institute at Columbia University)

which serve as a blueprint for how each country can address poverty and hunger.

So far, in every country the team has studied including Kenya, Ethiopia, Tanzania, Ghana, Senegal, and others progress is not happening at the pace needed to reduce hunger or cut it in half by 2015, said Denning. "Our assessment is that they're lagging behind in terms of progress and level of investment that they're putting into cutting hunger," said Denning. "It's simply not enough. The developed countries need to fill that gap by increasing their aid contributions to the countries that have plans in place but do not have the resources to actually implement them."

Average aid contribution from developed countries is about 0.25 percent of gross national product. The United States falls far below the average, at 0.16 percent, although it has committed itself to giving much more, said Denning. Australia, Japan, and Italy also fall far below average in contributions. "A number of developed countries have expressed in principle that they're committed to delivering on their long-held promise of reaching 0.7 percent," said Denning, "but their actual contributions remain appallingly small."

A protected spring provides a clean water supply to residents in Sauri, Kenya. (Image courtesy of Glenn Denning)

One major issue with foreign aid is that some countries do not have a sufficient plan in place to ensure that international aid is used effectively. And potential donor countries "remain concerned about corruption and inefficiency in using aid," said Denning. "The developed countries might even say, 'yes, we know there's a need -- but show us an accountability system whereby most of the money really gets to the people who need it,'" said Denning.

Typically, it takes about 18 months from the time that a needs assessment is done to the time that a country has a full-blown poverty reduction strategy in place. But in the meantime, the MDG Center has designed "quick wins" swift interventions that have immediate or short-term payoffs. For example, one quick win strategy is to dispense anti-malarial mosquito nets. Since malaria is the number one killer among African children, mosquito nets begin cutting down on infirmities and mortalities from malaria immediately.

The MDG Center also advocates programs that enable primary school children to have a nutritious noontime meal every day, using locally produced foods instead of food aid. This has multiple benefits, including increased attendance and improved quality of learning. But central to this strategy is that the food be procured locally, "not imported from Iowa, Europe, or Australia," said Denning. Using local foods creates a demand in the community for farmers to produce more.

Many experts in the Millennium Project consider agriculture to be the "engine of growth" and are promoting the central message that foreign aid organizations should facilitate local food production, rather than encourage a dependency on imported food. "It goes back to the old Chinese proverb that if you give people fish, they will eat for a day, but if you teach them how to fish, they'll eat for a lifetime," said Sanchez. "Imported food aid creates dependencies and sometimes really stunts local markets."

Experts in the Millennium Project agree that the solutions to world hunger are not far out of reach. "So much of what is needed in the poorest parts of the world, especially in Africa, lies in information that already exists," said Denning. "The cost of ending poverty is very small compared to what people in the developed world spend on their Starbucks coffees."

Reference(s)

Sanchez, Pedro A., and M.S. Swaminathan. 2005. Cutting world hunger in half. *Science* 307(5708): 357-359.

Related Link(s)

- UN Millennium Development Goals (http://www.un.org/millenniumgoals/)
- UN Millennium Project (http://www.unmillenniumproject.org/)
- The Earth Institute at Columbia University (http://www.earthinstitute.columbia.edu/)
- Center for International Earth Science Information Network (CIESIN) (http://www.ciesin.org/)
- Socioeconomic Data and Applications Center (SEDAC) (http://sedac.ciesin.columbia.edu/index.html)