



### Conflict and Contagion: A South Asia Simulation

featuring **Dr. Helene Gayle**, U.S. Centers for Disease Control and Prevention

Calling HIV/AIDS “probably the greatest human tragedy of our time,” **Dr. Helene Gayle** of the Centers for Disease Control and Prevention (CDC) told a conference and simulation cosponsored by the Environmental Change and Security Project that India may be the key to the epidemic’s global course.

Gayle, director of the CDC’s National Center for HIV, Sexually Transmitted Disease, and Tuberculosis Prevention, addressed “Contagion and Stability,” a two-day simulation conference hosted on 15–17 May 2001 by the U.S. Army War College in Carlisle, Pennsylvania. Representatives from the U.S. government, foreign embassies, and nongovernmental organizations joined leading scientists, scholars, and researchers to explore and negotiate over a scenario of plague epidemic in India and its consequences for regional and global security.

contribute most to the spread of HIV (population mobility, high rates of sexually-transmitted diseases, and gender inequality) are widespread there. “I think a lot of people actually would say that India, in many ways, may be the country that most influences the global epidemic in the long run,” said Dr. Gayle.



Helene Gayle

But there is reason for hope. While India’s society and leaders were in denial about the impact of AIDS eight or nine years ago, Gayle said that the Indian government has now made HIV its highest public health issue priority. There is also intense interest in the problem from overseas donors such as the World Bank and the U.S. Agency for International Development. But while praising the Indian government and its international partners, Gayle argued that there are still not enough

resources being devoted to fighting HIV/AIDS either in India or globally. “Although there is a clear understanding [about the problem],” Gayle said, “the level of activity, the level of focus, is still not what it should be.”

Besides calling for an increase in funding, Gayle outlined a multifaceted approach to address HIV/AIDS worldwide. Keys to the effort are a high-level political commitment to destigmatizing HIV and allowing those affected to seek services without fear of retribution or ostracization. Other steps are: widespread distribution of and education about condoms; private-sector involvement; quality assurance of generic anti-retroviral therapies; and the

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#### HIV/AIDS, the Developing World, and India

Gayle’s speech highlighted the perniciousness of HIV/AIDS and its strains on the health infrastructures of developing countries. She said that AIDS has risen in the last twenty years from a virtually unknown disease to become the fourth-largest cause of death worldwide and the leading cause of death in Africa. Perhaps even more significantly, the virus most often attacks people in their period of highest economic productivity. Gayle noted that many African countries are already seeing significant declines in important macroeconomic indicators because of AIDS. The epidemic is also taxing health care services that are already overburdened with such diseases as tuberculosis, cholera, and malaria.

India may be a bellwether for the future of AIDS worldwide, said Gayle. Approximately four million Indians are infected with HIV, which is only one percent of the country’s population. But Gayle pointed out that over 50 percent of some high-risk populations in India are infected, and that the factors that

*“The scenario emphasizes the global interconnections among issues of population, health, environment, and security: what happens in an Indian village one week can easily affect California the next.”*

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## ECSP Meetings

# Young Men and War: Could We Have Predicted the Distribution of Violent Conflicts at the End of the Millennium?

featuring **Christian Mesquida**, *York University* and **Neil Wiener**, *York University*

22 June 2001



Neil Wiener

**W**hy is war so ubiquitous, both historically and today? Research by two psychologists from York University suggests that the size of a country's young male population can tell us if that country either will be at peace or will engage in civil or interstate conflict. Their theory, which they call "the male age composition hypothesis," challenges the environmental security field's traditional model,

which views conflict as the result of a variety of interrelated factors—particularly population growth, resource scarcity, and environmental degradation.

The male age composition hypothesis uses the ratio of a society's young male population to its entire population as its only variable in predicting whether a given society will be involved in conflict. If the ratio approaches or exceeds 40 percent, **Neil Wiener** and **Christian Mesquida** say, the likelihood of that society being in "coalitional aggression" (their term for both inter- and intrastate conflict) grows exponentially. Wiener and Mesquida have traced the population pyramids of dozens of societies both historical and contemporary (such as Rwanda and Kosovo) to explain why those societies were at war or peace. They then use the framework of evolutionary psychology to hypothesize further that large numbers of young men are prone to conflict because it benefits them in the competition for sexual selection.

### Where Have All the Young Men Gone? Gone to Soldiers Every One

Building on the neglected 1960s work of scholars Herbert Moller and Gaston Bouthol, Mesquida and Wiener investigated a myriad of societies and conflicts—historical and contemporary, Southern and Northern, rich as well as poor. They studied population size (with particular attention to young men ages 15 to 29) as well as the severity of conflict, breaking the data down both by country and by continent. Applying their thesis to situations as diverse as the 1968 Paris riots, 1972 Sri Lankan insurgency, World

War I Germany, and Napoleonic France, they found an uncanny correlation between the ratio of young men in a society and that society's involvement in conflict.

They also applied the hypothesis to comparable contemporary situations such as the former Soviet republics between 1989 and 1993, all of which underwent similar political transformations and yet experienced different levels of conflict severity. Again, the researchers found that these republics' conflict levels were proportional to their ratios of young males to the rest of their populations. Mesquida and Wiener also looked at violence in Northern Ireland between 1969 and 1999, discovering that the bulk of the victims—those killed by bombs—were young men between the ages of 18 and 30. In his presentation, Mesquida predicted that, as the Irish male population ages, the violence in that troubled country will also ease.

### A "Natural Phenomenon"

Pointing to war's long history, Wiener called war a "natural phenomenon, in accord with human nature and part of human nature." He explained that the human (especially young male) tendency to engage in coalitional aggression must be an advantageous trait; if it were not, natural selection would have ensured the trait's extinction by now. Instead, Wiener suggested that coalitional aggression appears to have evolved over the years, with human physiology and chemistry adapting to maximize our capabilities for war.

In particular, according to Wiener, "sexual selection" accounts for coalitional aggression. The theory of sexual selection posits that those young men who best use the resources available to them are better able to attract a mate and reproduce. Males with a high social status (as judged by their culture) are preferred as mates, and in many cultures war is the best way for men to achieve an elevated status. Further, said Wiener, aggression may be the only resource young men in poor countries possess to gain a spouse. Under this formulation, "advantaged females" mate with

“advantaged males” and consequently pass on the genetic, cognitive, and emotional make-up that supports coalitional aggression to the next generation. Although war is dangerous, “failure to take risky behavior leads to a worse consequence—failure to reproduce,” Wiener argued.

Mesquida displayed a number of pictures of insurgents—Zapatistas, Khmer Rouge, Somalis, and others—and pointed to a commonality: all of the rebels were young men. Pausing at one photograph, he said, “We see Somalis when, in fact, we should see young men.” While these warriors might be acting on the will of the whole population, Mesquida suggested that they most likely were only following their own inclinations.

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“failure to take risky behavior  
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### Poverty and Democratization Not Factors

Mesquida and Wiener also attempted to debunk alternative theories of conflict that link its likelihood to poverty or a lack of democracy. They insisted that, while a relationship exists today between per capita GDP and conflict, this was not always true: in earlier times, some of the world’s wealthiest countries engaged in coalitional aggression. And Mesquida and Wiener also compared levels of democracy in a number of European countries

in 1850 and 1900 (using percentages of enfranchised population) with their levels of conflict; they found no relationship between a society’s democratization and its propensity to fight. Wiener argued that even “charismatic leaders” (such as Saddam Hussein or Napoleon) are actually *chosen* by their country’s large young male populations rather than leading them to war.

### Recommendations

In light of their findings, Wiener and Mesquida recommended that governments should (a) pursue population and immigration policies designed to reduce the young male population in unstable countries, and (b) aim economic policies and pacification efforts at this

demographic group. Wiener suggested policy changes such as instituting a “family” wage to give young men the resources to marry and have families; he also argued that stable countries should tilt their immigration quotas towards accepting more immigrants from countries with larger young male populations. Mesquida recommended increased family planning and economic empowerment of women, steps which have been strongly correlated to lower birth rates. ■

## ECSP-FORUM

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## ECSP Meetings

## Debating the Real State of the World: Are Dire Environmental Claims Backed by Sound Evidence?

featuring **Bjørn Lomborg**, Associate Professor, University of Aarhus, Denmark;  
**David B. Sandalow**, Executive Vice-President, World Wildlife Fund (discussant);  
and **D. James Baker**, former Administrator,  
U.S. National Oceanic and Atmospheric Administration (discussant)

2 October 2001



Bjørn Lomborg

Could the world's environment actually be getting not worse but *better*?

**Bjørn Lomborg** thinks so. His new book, *The Skeptical Environmentalist: Measuring the Real State of the World*, lit a firestorm of controversy when it was published last year in Europe. Lomborg visited the Wilson Center to present and defend the book (which has just been published in the United States). Discussants David Sandalow and James Baker

criticized *The Skeptical Environmentalist* as largely sloppy, misleading, and full of fatal misinterpretations.

Lomborg, a former member of Greenpeace, said that *The Skeptical Environmentalist* came out of his effort to debunk the work of the late economist Julian Simon, who argued that most environmentalist concerns—from global warming to rapid population growth to scarcity of resources—are unsupported by scientific evidence. But to Lomborg's surprise, the results of his research and statistical analysis ratified most of Simon's positions. *The Skeptical Environmentalist* instead asserts that it is *environmental advocacy groups* who distort the state of the earth's health as a fund-raising technique, through what Lomborg terms "The Litany" of dire forecasts.

### "Is This A Good Way To Spend Our Money?"

Lomborg argued that evidence clearly shows an environmental apocalypse is not at hand. Hunger, natural resource abundance, species extinction, life expectancy, pollution—by United Nations and other independent measurements, Lomborg said, all these categories have vastly improved and will continue to improve, both for the industrialized and for the

developing world. While there are still environmental problems and resource imbalances, Lomborg said, these are fewer and smaller than ever before; and policymakers should be rationally prioritizing societal needs instead of acting out of desperation. "We can only use our money once," said Lomborg, "so we should make sure we spend it in the best possible way. Are we making the right decisions now, or are we just handing over our wallets?"

Lomborg then sketched out a few of his specific findings. The world's percentage of starving people has

dropped from 35 percent in 1967 to 19 percent today, and is projected to drop to 6 percent by 2030. Crucial raw commodities such as oil have been decreasing in price because we are getting better at finding and exploiting them. Air pollution, by far the most injurious kind of environmental contaminant, is at its lowest point since 1585 in Lon-

don. (Lomborg admitted that, while air pollution is getting worse in the developing world, it will get better as developing countries follow the economic growth patterns of the developed world.)

*The Skeptical Environmentalist* particularly targets the Kyoto Protocol for criticism. While global warming certainly is occurring, Lomborg said, Kyoto's measures would postpone its effects only slightly, and at a cost of \$150 billion to \$350 billion a year. "For the cost of Kyoto for one year," said Lomborg, "we could be giving clean water and good sanitation to every single human being on the planet"—which, he maintained, would stop 200 million deaths and 500 million illnesses annually. "Is this a good way to spend our money?" he lamented.

Lomborg concluded by stating that spending on the environment is in fact a profoundly inefficient way to save lives. He cited a Harvard Center for Risk

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*"For the cost of Kyoto for one year, we could be giving clean water and good sanitation to every single human being on the planet."*

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—BJØRN LOMBERG

Analysis study that, while a life is saved for every \$9,000 in health care spending, it takes \$4.2 million in environmental spending to achieve comparable results. Lomborg added that U.S. environmental spending (currently at \$21 billion) could save 60,000 more lives “for free” if spent optimally on something else. “In other words,” he said, “our current priorities are committing 60,000 statistical murders every decade.”

### Sandalow: Book Understates Environmental Problems

While agreeing that many global environmental and human security trends are getting better, David Sandalow said that he found *The Skeptical Environmentalist* “quite disappointing,” full of obvious errors, sloppy sourcing, and chronic exaggeration of the positions of environmental advocacy groups and thinkers. “In the United States,” Sandalow said, “there is a much more complex and less momentous view of environmental problems than that presented by Professor Lomborg.” He said that the book was best understood as a provocative and ambitious polemic, and that readers should proceed with caution.

Sandalow went on to criticize Lomborg for underplaying significant environmental problems. For example, while *The Skeptical Environmentalist* concedes that global species extinction is now occurring at 1,500 times the natural background rate, Sandalow said that Lomborg characterized this phenomenon as “not a catastrophe, but a problem.” “If we had a 1,500-time increase in rainfall, spread of disease, or unemployment,” said Sandalow, “those would be considered pretty big problems.”

Sandalow also called Kyoto a “paradigmatic case of decision-making under uncertainty,” and accused Lomborg of emphasizing the uncertainties about climate change over the certainties. “Kyoto alone was never intended as the solution,” said Sandalow. “It was intended to set the world in the right direction, and to set the necessary advanced technology in motion. It’s not an indictment of Kyoto that it alone fails to solve the problem.”

*“Kyoto alone was never intended as the solution. . . It’s not an indictment of Kyoto that it alone fails to solve the problem.”*

—DAVID SANDALOW

*“Values are critical in making decisions—you can’t get them just from statistics.”*

—JAMES BAKER

### Can Cost-Benefit Analysis Include Values?

James Baker called *The Skeptical Environmentalist* an impressive piece of work, and linked it to previous efforts to reprioritize environmental questions, such as Gregg Easterbrook’s *A Moment on the Earth*. But although Lom-

borg’s book is strong in factual information, Baker said, it is far weaker on analysis. Lomborg, Baker charged, does not have the background to interpret environmental data, and his failure to distinguish between peer-reviewed and non-peer-reviewed material fatally compromises his argument.

In fact, Baker said, Lomborg’s data about an improving environment is common knowledge, and well-represented in government and policy debates—the Report of the President’s Council on Sustainable Development makes many of the same points. The real question, Baker said, is how we are going to manage the earth’s resources in a period of rapid change. Lomborg’s mistake, Baker said, is to focus on global averages to the exclusion of regional and local realities—such as how sea-level rise associated with climate change will affect small island states, or how overfishing will impact those nations dependent on the sea for protein.

Baker also criticized Lomborg for an overreliance on cost-benefit analyses, saying that “values are critical in making decisions—you can’t get them just from statistics.” He cited MIT professor Robert Solow’s inclusion of human and natural capital in GDP calculations as a better model than Lomborg’s utilitarianism. “We don’t make social judgements that accept losers just because it costs less,” said Baker. A prime example of such a value-based judgement, Baker said, is the 1973 Endangered Species Act, which is now recognized as a basic expression of American values but which would fail conventional cost/benefit analysis.

Discussion focused on both the accuracy of Lomborg’s data and his societal priorities. Lomborg reiterated both his optimism about the future and his call for clear world priorities. As an example, he said that those who have criticized intensive agriculture in India for contaminating water wells there with arsenic were missing how

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## PECS Research

## Geographic Information Systems as a Tool for Population-Environment Research

*By Jennifer Wisnewski Kaczor*

Improvements in desktop-computing capabilities over the last decade have facilitated an explosion in the use of geographic information systems (GIS) technology by researchers in environmental sciences, health sciences, and social sciences. Recognizing the unique capability of this technology to analyze data at local, national, and international levels, population-environment professionals now use GIS in a number of ways to study how human populations impact their environments. Though large research institutions and government agencies still dominate research in the field, smaller research, public policy, and advocacy organizations are now increasingly using less-expensive desktop GIS products to study the relationship between human population dynamics and environmental change.

### What Is GIS?

A geographic information system combines a computer-mapping tool with a relational database that has statistical analysis functions. The combination enables researchers to (a) map *spatial* data (such as watershed boundaries or tropical forest); (b) assign *attribute* data (such as a water-quality indicator for a river, or total population of a city) to the spatial data; and (c) perform statistical analyses on these data.

### GIS for Population-Environment Research

The interdisciplinary nature of the population-environment field demands a research tool that can demonstrate the relationships between and among diverse variables, and GIS are particularly well-suited to meeting this demand. For example, because demographic data is usually collected in *administrative* units at the provincial, county, or census level, it has been difficult to calculate demographic dynamics within *ecological* boundaries such as watersheds, elevation levels, or vegetation type. But the analytic flexibility of GIS allows researchers to perform such calculations.

For example, Population Action International has used a GIS to study human population dynamics within ecologically diverse zones designated by Conservation International. World Resources Institute has also used GIS to look at population and land-use issues at the watershed level.

Community-based GIS projects (sometimes referred to as participatory mapping projects) are also growing in popularity. Natural-resource managers are finding GIS indispensable in integrating (a) the experiences, knowledge, and socio-economic conditions of local communities with (b) natural resource data such as water quality, forest degradation, and water flow. An International Development Research Centre (IDRC)-funded project in Nepal used a GIS to map baseline indicators for natural resources, socio-economic factors, and population in the Jhikkhu Khola watershed. Nepalese government natural-

resource managers and local communities provided data for the project; using this data, researchers found that such natural resources as water and fertile soil were rapidly deteriorating as population and land-use pressures grew in the watershed. These findings allowed the watershed's communities and natural-resource planners to: (a) see the linkages among water availability, soil erosion, and forest degradation; (b) understand the importance of planned natural-resource management efforts; and (c) even take a lead role in implementing change. In fact, GIS also allow communities to build the technical capacity to continue natural-resource management. Maps created through these projects can be used to resolve disputes over natural resources as well as to lobby national governments for natural-resource protection or improved management.

The Internet has also become home to some very powerful and flexible GIS databases that are available to anyone with Web access. Web-enabled GIS allow users to display and view multiple datasets, conduct queries for specialized analysis, and search for site-

*“Smaller research, public policy, and advocacy organizations are now increasingly using less-expensive desktop GIS products to study the relationship between human population dynamics and environmental change.”*

specific locations. For organizations and companies, Web-based GIS can be a cost-effective way to distribute GIS capacity to their staff members without purchasing GIS software for each workstation.

### Challenge: Data Cost and Availability

Despite these optimistic developments, there are still some obstacles to the universal use and applicability of GIS. Although GIS software prices have fallen dramatically, high-quality data can still be prohibitively expensive as well as difficult to obtain. (These factors particularly affect researchers studying developing countries.) Access to high-resolution data can also prove difficult. Because government agencies remain the major manufacturers of satellite-derived data, the data is usually screened for national security purposes. Many countries broadly classify their high-resolution population and land-use data, hindering researchers. Even the United States (which has a very open policy towards data sharing) has classified thousands of datasets collected by military and intelligence organizations, rendering the data inaccessible. The success and growth in the use of GIS in the United States was based partially on the availability of free or inexpensive GIS data provided by the U.S. government and research institutions. The U.S. government and governments around the world should review their data-access policies and, where appropriate, give communities and research organizations access to data that can be used to improve natural-resource management.

### Needed: Better Datasets

The ability of GIS to map population data onto ecologically-sensitive transboundary areas is still limited by the lack of population data that is broken down by different scales. Two large-scale projects—Gridded Population of the World (GPW) at Columbia University's Center for International Earth Science Information Network (CIESIN), and Oak Ridge National Laboratory's Landscan—have created global-population-density spatial datasets in response to this problem. These two projects used different methodologies to develop their datasets, both with certain limitations. The GPW is based on census records and calibrated to UN population numbers. Landscan, on the other hand, creates a model to predict human population density using indirect measures such as nighttime lights, road networks, and slope; it then assigns population to the grid cells (single units of data representing geographic areas) using the most reliable census data available. Both datasets become less effective for analyses at higher resolutions. The Netherlands' National Institute of Public Health and the Environment (RIVM) has also created a historical database of global

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## GIS WEB RESOURCES

### Getting Started

*"An Internet Guide to Geographic Information Systems"*

<http://www.gis.com/>

*"The Geography Network"*

<http://www.geographynetwork.com/>

*Center for Spatially Integrated Science (CSISS)*

<http://www.csiss.org/>

*Environmental Systems Research Institute (ESRI)*

<http://www.esri.com/>

### Environment Data

*U.S. Geological Survey*

<http://mapping.usgs.gov/>

*World Conservation Monitoring Centre (WCMC)*

<http://www.unep-wcmc.org/>

### Population and Environment Data

*American Association for the Advancement of Science*

<http://www.aaas.org/international/atlas/contents/aaas.html>

*Center for International Earth Science Information Network*

<http://www.ciesin.org/metadata.html>

*National Institute of Public Health and the Environment, Netherlands (RIVM)*

<http://www.rivm.nl/env/int/hyde/index.html>

*Oak Ridge National Laboratory*

<http://www.ornl.gov/gist/projects/LandScan/SIMPLE/smaps.htm>

*United Nations Environment Programme*

<http://www.grid.unep.ch/data/grid/access.html>

### Funding

*Conservation Technology Support Program (CTSP)*

<http://www.ctsp.org>

### Some Organizations That Use GIS

*Population Action International*

<http://www.populationaction.org>

*Conservation International*

<http://www.conservation.org>

*World Resource Institute*

<http://www.wri.org>

## From The Field

# Collaborating for More Effective Population-Environment Interventions: Lessons from Madagascar

By Dan Whyner

*Dan Whyner was a University of Michigan Population-Environment Fellow in Madagascar from 1997 until 2000. He provided management and technical support to experimental programs linking population, health, and environment in the “buffer” zones that surround protected areas in several of Madagascar’s eco-regions. Whyner has a professional master’s degree in international natural resource policy from Duke University.*

### Family Planning in Madagascar

APPROPOP was a USAID-funded five-year project that aimed to increase the number of Malagasy practicing modern family planning. When the project began in late 1993, contraceptive prevalence in the country for women in union was only 5 percent. At project’s end, national-level contraceptive prevalence had increased to nearly 10 percent for women in union—still low relative to many countries, but a marked improvement in just five years. To increase family planning acceptance in Madagascar, APPROPOP focused on four important areas: increased access, improved quality of care, demand creation, and institutional strengthening of organizations offering family planning services.

When APPROPOP began its work, few sites outside Madagascar’s larger urban areas offered family planning services, and outreach programs had limited experience in building demand for these services. APPROPOP’s design team thus developed a grants program to foster innovation in the design and implementation of family planning programs. This program (APPROPOP-PF) enabled organizations working in both urban and rural areas of the country to test and identify viable approaches for increasing contraceptive prevalence rates (CPRs). APPROPOP-PF provided grants to an array of partner organizations, including the three integrated conservation and development projects that are the focus of this article.

I arrived in Madagascar in early 1997 as a Population-Environment Fellow with APPROPOP/PF. My duties included co-supervising three pilot grants awarded by APPROPOP to environmental organizations for the provision of health and family planning services in remote, buffer-zone communities. All three grant projects had already been functioning for more than two years and were preparing for completion in early 1998. They provided APPROPOP and its partners with an opportunity (a) to test new approaches to the provision of family planning services, and (b) to assess how to best respond to rural community needs in a challenging remote setting.

### Biodiversity Conservation in Madagascar

As with family planning, the conservation movement in Madagascar was also emerging in the early 1990s. During the previous decade, the government had begun working with the donor community and interested international environmental organizations to better address the country’s acute environmental problems. Most of the concrete actions were taken in the buffer zones of a number of priority protected areas, and took the form of Integrated Conservation and Development Projects (ICDPs).

The ICDPs attempted to reconcile two competing goals: (1) conserving the nation’s unique biological heritage so that it would offer long-term economic and social benefits to the country as a whole, and (2) meeting the needs of residents living in the buffer zones who were dependent on the protected areas’ resources for their immediate survival. A typical ICDP engaged



*Dan Whyner facilitates a community assessment of changes in several livelihood conditions in Ambalagoavy village over the last fifty years. These changes included population, migration, health status, farm acreage per family, farm production per family, number of livestock per family, and forest extent.*



in a variety of conservation activities (such as park infrastructure development and programs to foster environmental education in local schools and communities) as well as development programs (including literacy programs and diffusion of improved agricultural practices).

### ICDPs Use APPROPOP Grants to Offer Family Planning

Three ICDPs operating in Madagascar during this period were awarded grants by the APPROPOP project to implement family planning programs in the buffer-zone communities. One partner, Conservation International (CI), was operating an ICDP in and around the Zahamena Reserve in northeastern Madagascar, which harbors arguably the greatest diversity of lemur species on the island. Another was the Ranomafana National Park Project (PPNR), which later became the NGO MICET (Madagascar Institute for the Conservation of Tropical Environments). These two organizations worked in and around Ranomafana National Park, home to the recently-discovered rare Golden Bamboo Lemur. The third partner, World Wide Fund for Nature (WWF), collaborated with a health NGO, Association Santé Organisation Secours (ASOS), to start health programs near the Andohahela Reserve, a richly biodiverse region in the extreme southeast of Madagascar that contains rainforest, dry forest, and spiny forest biomes.

The health programs of each ICDP were managed by mobile health teams comprising doctors, nurses, and certified midwives. These teams made regular visits to remote buffer-zone villages to provide preventative and curative health care as well as health education to populations who would otherwise not have had access to these services. The mobile health teams also collaborated with other health providers in their vicinity to increase the acceptance of family planning and improve overall health in target communities.

### Key Assumptions

The environmental partners made three initial assumptions about the value of family planning both to the target buffer-zone populations and to the protection of biodiversity in the protected areas:

1. *Implementing a family planning program in the context of an overall health program could increase the trust of the target populations in the ICDP by addressing their often-pressing needs for contraceptives, vaccines, health care, and health education.* This trust would then give the ICDP's other programs (such as resource management and conservation activities) a better chance of acceptance and success.

2. *Family planning services in the context of health programs were in and of themselves important development activities for these remote rural populations.* Maternal and child health statistics for Madagascar are worse than the average for sub-Saharan Africa, and statistics for its rural areas are even more sobering. Family planning can help prevent unwanted births and increase birth spacings, both of which can help improve health and nutritional conditions for mothers and children.
3. *Family planning programs in the buffer zones of parks and reserves could be part of a long-term strategy to decrease demographic pressures on protected areas.* Reduced population growth would have a beneficial impact on the long-term sustainable use of natural resources.

The last assumption was the most problematic, and I worked with the ICDPs and APPROPOP/PF to focus on the first two assumptions only. There are two main reasons for this. First, it is difficult to control for other variables (such as resource-utilization practices, access to markets and social services, or natural disasters) when trying to measure the effect of contraception on the quality of natural resources in and around protected areas. Second, the use of family planning as a tool of the conservation community often makes it suspect to local populations, who feel that their fertility is being controlled. Clearly, family planning can only be a sustainable intervention in these regions if the local populations feel that it is a *resource* for them to improve the health and economic well-being of their families—not the tool of the conservation community.

### Results, Similarities, and Differences

The target populations for the pilot programs were small, difficult to reach, and arguably harder to recruit than urban clients. Despite these circumstances, the three  
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*This black and white ruffed lemur is an example of Madagascar's biodiversity, which is threatened by high rates of deforestation.*

## Book Review

## Environment Matters: Refugees and International Relations

By *Shin-wha Lee*

Seoul, Korea: World Human Development Institute Press, 2001. 225 pp.

### Reviewed by *Nicole Nolan*

A defining tenet of the environmental security field is that environmental stress contributes to intra- and interstate violence and thus poses a major threat to security. In *Environment Matters: Conflicts, Refugees and International Relations*, Shin-wha Lee takes on the difficult challenge of transforming this broad theoretical tenet into a more precise and operational concept that can be empirically tested. One of her major contributions is to see conflict as an evolving “process” which the environment can protract or alter as well as outright provoke. And her emphasis on the environment as only one factor in a complex matrix of political, social, and economic catalysts for conflict provides both a more manageable and a more promising framework for analyzing specific cases.

### Sudan and Bangladesh

In fact, the first section of *Environment Matters* examines case studies of conflict in Sudan and Bangladesh. Both countries are crucibles of environmental degradation, state policies, population displacement, and ethnic tensions. In the case of the Sudanese civil war, Lee acknowledges that ethno-religious factors have been the primary cause of the crisis. But she also argues that by looking at conflict as a *process of change* and not a one-time event, we can begin to understand that the character of the Sudanese conflict was influenced by such environmental factors as desertification, which forced the migration of northern Sudanese southward. This migration then contributed to population pressures, land overexploitation, increased competition for resources, and intensified ethnic hostilities.

For Bangladesh, Lee cites how government inefficiency and corruption in dealing with the complex interactions of rapid population growth, extreme poverty, and catastrophic natural disasters can also destabilize an already precarious situation. Bangladeshi government policies caused encroachment by Bengali

people into the lands of tribal groups in the Chitragong Hill Tracts area, causing demographic and environmental stresses that eventually spurred many members of the tribal groups to migrate. Again, this migration became a source of conflict—in this case, between the refugees and the receiving populations in Tripura, India.

### Environmental Refugees

*Environment Matters*'s second section explores the dynamics of environmental change and such population displacement. Lee argues that the prevailing definition of refugees under the 1951 UN Convention Relating to the Status of Refugees (which only recognizes those refugees displaced for political reasons) is inadequate: it ignores the needs of those people uprooted because of arable land scarcity, natural disasters, and other environmental pressures. But governments and international aid groups have resisted creating legal

grounds for identifying environmental refugees, both because (a) the concept is difficult to define, and (b) because governments are unwilling to shoulder the financial responsibilities necessary to protect and assist these individuals. The difficulty of identifying who is an environmental refugee also raises the risk that extending refugee status to many types of displaced peoples could dilute the effort to address conventional refugee needs.

Nonetheless, Lee favors broadening the 1951 Convention, arguing that, for example, environmental refugees in Bangladesh and famine-displaced victims in Sudan and North Korea deserve protection and aid. She also highlights the costs—in terms of the potential of violent conflict, instability, and further environmental degradation—of denying official refugee status and international aid to environmentally-displaced communities.

The final section of *Environment Matters* addresses the growing need for environmental cooperation to

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*“By looking at conflict as a process of change and not a one-time event, we can begin to understand that the character of the Sudanese conflict was influenced by such environmental factors as desertification.”*

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address transboundary and regional environmental problems. Here, Lee highlights environmental cooperation efforts in Northeast Asia. She discusses the bilateral and multilateral environmental cooperation among China, Japan, and Korea on “Yellow Dust” (the major long-distance air polluting agents blown from Mongolia and China to Korea) and the multilateral cooperation for the peaceful uses of nuclear energy in Northeast Asia. The book also provides an exhaustive description of international organizations and environmental NGOs.

### Future Avenues For Research

In sum, Lee’s focus on conflict as an ongoing and evolving process is a major advance in identifying how environmental destruction and resource scarcity shape

social and ethnic disputes. The book’s detailed case study analysis also provides a good beginning to the project of empirically testing the theories of environmental security. The major drawback of *Environment Matters* is its lack of hard data (which echoes other attempts to quantify the links between environmental degradation and conflict). The field will require a wealth of other case studies (and a plausible way to quantify the validity of these aggregate data analyses) before being able to predict accurately how environmental factors might influence the sources and trends of future conflicts. ■

*Nicole Nolan is a project associate with the Environmental Change and Security Project.*

## ECSP REPORT 7 NOW AVAILABLE

The North-West Frontier Province (NWFP) of Pakistan, a crucial strategic area now being flooded with refugees from Afghanistan, is ripe for “a large-scale disaster,” according to University of California-Irvine professor Richard Matthew. Writing in the latest issue of the *Environmental Change and Security Project Report*, Matthew says that population growth, environmental degradation, weak governance, and poverty have created a “dire Malthusian scenario of scarcity” that could easily contribute to massive civil and regional conflict.

*ECSP Report 7* also features a comprehensive and disturbing analysis of **African hunger and conflict cycles** over the last 25 years as well as a debate among leading population activists and scholars over **whether the world is really about to experience a population implosion**. In addition, the *Report* contains recommendations for **effective conservation tactics in the Brazilian Amazon**, a hard look at **Brazil’s new Amazonian environmental monitoring system**, and commentaries from around the world on the National Intelligence Council’s *Global Trends 2015* report.

The *Report’s* “Is There a Population Implosion?” presents a passionate debate over **Nicholas Eberstadt’s** recent *Foreign Policy* article “The Population Implosion.” While Eberstadt contends that the era of rapid global population growth is over, other participants (such as **Amy Coen** of Population Action International) argue that global numbers belie local realities and that family-planning programs are still an essential public-health component for developing countries.

The *ECSP Report* is distributed free to over 7,000 policymakers, practitioners, journalists, scholars, and interested citizens. For a copy of the latest issue, email [ecspwwic@wwic.si.edu](mailto:ecspwwic@wwic.si.edu) or visit our Web site at <http://ecsp.si.edu>.

**FROM THE FIELD**

(continued from pg. 9)

partners produced 1,141 regular users by the end of their grants. Overall, approximately 50 percent of the overall objective for continuing clients was met. However, WWF/ASOS was far more successful and met 69 percent of its objective, while MICET reached 46 percent and CI only 28 percent. Each of the grant projects included a number of standard elements, such as: close collaboration with Ministry of Health personnel, training of conservation and development agents working for the ICDPs in family planning outreach, community mobilization for family planning outreach, a rigorous schedule of visits to peripheral-zone communities by the mobile health teams, and regular reporting through quarterly monitoring and evaluation updates.

Some notable differences among the approaches of the three grantees were (a) the use of paid rural outreach workers based in the field, (b) the implementation of community-based distribution (CBD) programs for contraceptives, and (c) the creation of family-planning users associations. WWF/ASOS at Andohahela employed local rural outreach workers trained in broad-based development; this training included outreach techniques as well as technical proficiency in conservation, agriculture, animal husbandry, and health. These workers had more responsibilities than the conservation and development agents of other ICDPs in that their work involved management responsibilities that helped ensure project goals were accomplished.

The grantees also took different approaches to CBD programs in their target areas. While the WWF/ASOS grant adopted a CBD program almost immediately, MICET did not begin its CBD program until the PPNR grant had been functioning for more than two years, and Conservation International never used CBD. For WWF/ASOS, the CBD approach resulted in a larger number of family planning clients and was a viable alternative to distant health posts. In fact, this CBD program was responsible for 60 percent of all the grant's new clients.

Finally, MICET established contraceptive-users associations near the fixed public family-planning sites. These associations generated their own revenues through the donation of small livestock, a small membership fee, and the organization of an annual fund-raising party. These revenues covered the cost of each family planning client's annual supply of contraceptives.

In terms of environmental objectives, the ICDPs were successful in reducing forest destruction rates in their target zones and in disseminating new agricultural techniques and approaches to their target populations. However, the problems underlying the threat to biodiversity in these areas—i.e., poverty and lack of access to needed production inputs and knowledge—persist and will continue to threaten the remaining forested zones unless continued support is given to the buffer zone communities. The continuation of social programs such the

health and education activities of these ICDPs would ensure the success of sustainable-development actions in these zones.

**Lessons Learned**

Populations such as those targeted by these grants are isolated, far from services, and perhaps not even aware such services exist. Thus, education and demand-creation activities should be factored into the design of any program addressing their needs. In addition, these communities are less literate than others and require special training to take advantage of CBD or outreach programs. Their remoteness has also engendered more distrust of outsiders than is often encountered with other groups. Development programs for such populations must therefore build in greater lead-time before success can be measured and achieved.

The following elements emerged as important to the success of these grant programs:

1. The value of a CBD program cannot be underestimated. Targeted populations are more responsive in general to their peers than to public health workers or ICDP health teams who may not be from their area or ethnic group.
2. Family-planning-users associations provide an excellent means to increase the number of users and to reduce drop-outs through peer counseling as well as group assistance.
3. While perhaps unsustainable in the long-term, the use of field-based rural outreach workers is an effective way of ensuring accurate reporting and the availability of contraceptive stocks to actual and potential clients.

Arguably more important than any of these elements, however, is the organizational structure of the ICDP implementing the program. The WWF/ASOS grant, which was by far the most effective grant in terms of continuing clients, was technically managed by its health partner (ASOS). Because of this, the WWF/ASOS grant program made its decisions based on the sound medical experience of an independent NGO—not on the competing needs for program funding that development officers for traditional ICDPs must balance. In contrast, the health teams of PPNR and CI were submerged in an organizational structure composed of medical personnel, rural credit experts, agronomists, livestock breeders, and education specialists, all competing for limited funds. This structure inhibited independent thinking and planning of program interventions.

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## **SIMULATION**

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recruitment of men to HIV prevention.

"We often talk about how, in a society where women's roles are not appreciated, it is important for women to become empowered," said Gayle. "But unless we have the other side of the equation working with it, getting men involved, we are not going to be able to do that job that is necessary in India as well as in other societies."

## **Disease and Stability in South Asia and the World**

Gayle, who starting this fall will be on detail from the CDC to the Bill & Melinda Gates Foundation, then joined the other attendees in the "Conflict and Stability" simulation. Participants divided into teams (representing India, the United States, international organizations, and nongovernmental organizations) to formulate and negotiate responses to a scenario of massive plague outbreak in the Indian state of Andhra Pradesh.

In the scenario, international tensions are high. While India has suggested that both Pakistan and the United States were involved in the outbreak, some countries either refuse to accept flights from the region or quarantine their passengers. A typhoon on India's western coast forces migration, which threatens to spread the contagion. Meanwhile, a software engineer from Andhra Pradesh's largest city flies to San Francisco, where he is hospitalized with signs of plague.

In essence, the scenario emphasizes the global interconnections among issues of population, health, environment, and security: what happens in an Indian village one week can easily affect California the next. Mindful of this, the simulation teams first negotiated a response to the immediate crisis that allowed India to take the lead in managing the outbreak as the international community provided supplies and funding and tried to open channels of regional communication.

The teams then developed long-term policy recommendations both for prevention of another such crisis and for U.S. action. All teams agreed that strengthening South Asian health care infrastructure—with an emphasis on HIV/AIDS care and prevention as well as enhanced delivery at the local level—was essential. Other consensus recommendations included: the easing of trade barriers between the United States and the region; the development of international early crisis warning systems; and a recommitment to education for women and access to family planning as a strategy for poverty alleviation. ■

## **LOMBORG**

(continued from pg. 5)

that agriculture had saved hundreds of millions from starvation. "The people who acted are those who believed in the future," Lomborg asserted, "who believed that technology probably could solve our problems."

Lomborg went on to defend his criticism of Kyoto, saying that he had based his cost-benefit analysis on the average predictions of six to twelve climate change models (including that of the International Panel on Climate Change). In response to a question about how global numbers mask a decline of some tree and bird species, Lomborg asked rhetorically if people really minded. "People want clearings in forests for play," he said. "Is it a worse forest, or better? And for whom?" He also defended cost/benefit analysis, saying that it is already (however unconsciously) the world's default method of evaluation. "We all feign that we feel bad about it, but it's a way of analyzing the status quo," Lomborg concluded. ■

*ECSP has provided an on-line space for public comments on The Skeptical Environmentalist and the debate surrounding the book. To read the comments or make your own posting, go to <http://ecsp.si.edu/lomborg.htm>.*

## **CONTAGION AND CONFLICT: IMPLICATIONS FOR U.S. FOREIGN POLICY**

*A Policy Brief from the Environmental Change and Security Project*

ECSP had now produced a Web-based policy brief based on recommendations from the "Contagion and Stability" simulation conference held in May 2001 at the U.S. Army War College in Carlisle, Pennsylvania. To read the brief, go to ECSP's Web site at <http://ecsp.si.edu>.

## Project News

### UPDATE

In December, ECSP will publish under one cover three articles that examine **global and regional linkages between population and water**. The articles draw on regional case-study material in examining population-water dynamics in Southern and East Africa, India, and the Philippines. ECSP and the University of Michigan Population Fellows Programs co-commissioned each article from a different Northern-Southern author team to promote conversation between Northern and Southern perspectives and to raise the profile and exposure of Southern authors who are directly familiar with these issues in developing countries. If you would like to receive a copy of the papers or for more information, please email [ecspwwic@wwic.si.edu](mailto:ecspwwic@wwic.si.edu).

ECSP has begun an exciting series of by-invitation **online forums** that will discuss pressing issues in population, health, environment, and security. The first forum ("Is There a Population Implosion?") was held last spring and featured scholars and population growth activists debating ideas raised by Nicholas Eberstadt's article "The Population Implosion" in the March/April 2001 issue of *Foreign Policy* magazine. Future forums will treat topics such as population and Johannesburg 2002 as well as health as a security issue. Read the transcript of "Is There a Population Implosion" in *ECSP Report 7* or on our Web site at <http://ecsp.si.edu>, where you can also post a public comment on the discussion.

The features section of the *Environmental Change and Security Project Report* will be **peer-reviewed** beginning with next year's issue. We welcome all submissions and are particularly interested in pieces on population, environmental change, and security in light of the 2002 World Summit on Sustainable Development. Please contact ECSP Editor Robert Lalasz at [lalaszrl@wwic.si.edu](mailto:lalaszrl@wwic.si.edu) for submission guidelines.

The September 2002 **World Summit on Sustainable Development** in Johannesburg, South Africa is less than a year away. ECSP wants to know what you and your organization are planning for the tenth anniversary meeting of the Rio Earth Summit. Send to [ecspwwic@wwic.si.edu](mailto:ecspwwic@wwic.si.edu) news of the research, writing, and programming that you are targeting for this seminal United Nations conference, which 50,000 participants are now expected to attend.

ECSP is benefiting from the research and activities of a number of Wilson Center Fellows and Public Policy

Scholars. Senior Public Policy Scholar **William Krist** continues to coordinate the Center's Trade and Environment Forum, and recently produced the conference proceedings *Trade and Environment, the WTO, and MEAs: Facets of a Complex Relationship*. The conference and publication were cosponsored by the Wilson Center, the Heinrich Böll Foundation, and the National Wildlife Federation.

Joining the Center this fall as a Senior Public Policy Scholar is **John Sewell** of the Overseas Development Council; he will also tackle trade and environment issues. Later in the fall, **Ellen Brennan-Gavin** of the U.N. Population Division and **Alexandr Nikitin** of the Bellona Foundation will also be in residence at the Center. Others who continue to pursue ECSP-related topics include **Hattie Babbitt**, **David Rejeski**, and **Murray Feshbach**.

ECSP and its partner the University of Michigan Population Fellows Programs want to know how you are **teaching population, environmental change, and security (PECS) issues**. As part of an effort to support educators at universities and policy training institutes, we are soliciting information on the sample syllabi, scenario exercises, research topics, and other teaching tools and materials you are currently using or need for teaching PECS. Please send feedback to [ecspwwic@wwic.si.edu](mailto:ecspwwic@wwic.si.edu).

ECSP wants to wish two departing staff members the best of luck in new endeavors. **Simona Wexler** departed in May to work at a DC law firm, and **Clair Twigg** is traveling south this fall to attend Duke University's Nicholas School of the Environment. Joining ECSP as project associates are **Jennifer Kaczor** (formerly of Population Action International) and **Nicole Nolan** (formerly of the Overseas Development Council). **Ariel Méndez**, who had been working as an intern for the Wilson Center's Trade and Environment Forum, has also come on board as a project assistant.

Along with co-author **Stacy VanDeveer** of the University of New Hampshire, ECSP Director **Geoff Dabelko** published "It's Capacity Stupid: International Assistance and National Implementation" in the May 2001 issue of *Global Environmental Politics*. The article argues for a more encompassing approach to environmental capacity building in order to increase the effectiveness and sustainability of international assistance programs. For more information visit the journal's Web site at <http://mitpress.edu/GEP>.

**FROM THE FIELD**

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**Next Steps**

In Madagascar, planners have rethought the ICDP approach for two reasons. First, significant demand for natural resources from protected areas often comes from sources far from the areas themselves, such as commercial timber operations, small-scale charcoal producers, and ecotourism operators. Second, a large number of biodiverse areas still enjoy no protection at all. In addition, the second-wave USAID-funded health project now combines reproductive health (including family planning), child survival, and nutrition. As a result, the opportunities for equitable collaboration between environmental and health organizations are greater than before.

Since the completion of the APPROPOP project, I have worked with USAID-funded environmental and health programs, local development NGOs, and the Tany Meva Foundation (Madagascar's National Environmental Foundation) to develop new integrated programs that build on our experience with the APPROPOP grants. The result has been the creation of a consortium called Voahary Salama (literally "Nature + Health" in Malagasy), comprising all of the funding, technical support, and operational partners in Madagascar that are working towards such integrated health-environment activities. We have also secured funding and/or technical support from the USAID-funded health and environment projects in Madagascar (including the Environmental Health Project and the University of Michigan Population-Environment Fellows Programs) as well as funding from the Tany Meva Foundation and the Summit Foundation. At present, four program sites have been identified, initial baseline surveys are being completed, and integrated program activities are being developed around the themes of nutrition and environmental health. ■

**GIS**

(continued from pg. 7)

population density and land use covering the period from 1750 to 2000 (the HYDE database). This dataset is an excellent illustrative tool at the global level, but has a very low resolution and is not really useful for analyses at any level.

Although environmental data is far more available than population data, it can be similarly difficult to obtain. The U.S. Geological Survey offers a global land-use dataset; as with population data, however, there is a lack of consistent datasets at different scales. Areas like the United States have very good, high-resolution data, while other areas such as Africa have less complete information. Developing countries need better environmental datasets, particularly for good time-series data at various scales to study land-use change and natural-resource degradation. Some organizations, such as The Nature Conservancy in Latin America and Conservation International in Latin America and West Africa, are working on land-cover datasets for priority conservation areas.

**Getting Started**

Organizations interested in building GIS capacity to analyze population and environment questions now have many technical and financial resources available, both in print and on the Web. GIS software manufacturers and universities offer training courses on how to implement, manage, and use GIS in a variety of sectors. Active listservs and user communities provide advice on technical and financial aspects of implementing, maintaining, and using a GIS. To find out more information about these resources, please see the list of Web resources that accompany this article. ■

*Jennifer Wisniewski Kaczor is a project associate for the Environmental Change and Security Project.*

## China Environment Series Issue 4

The latest edition of the *China Environment Series* is now available from The Working Group on Environment in U.S.-China Relations, a project within the Woodrow Wilson Center's Environmental Change and Security Project. *CES* examines environmental and energy challenges facing China and explores creative ideas and opportunities for governmental and nongovernmental (NGO) cooperation.

*CES* 4's feature articles deal with how political and economic changes in China have affected the implementation of environmental and energy policies there. Taken together, these articles also paint a clearer picture of the changing role local governments and NGOs (both Chinese and foreign) are playing in shaping the priorities and effectiveness of environmental protection and energy initiatives in China. *CES* 4 also contains an updated and expanded "Inventory of Environmental Projects in China," which describes projects conducted by U.S. government agencies as well as nongovernmental and multilateral organizations.

To obtain a copy of *China Environment Series* 4, please contact Jennifer Turner at 202-691-4233 or by email at chinaenv@erols.com. You may also download a copy from the ECSP web site at <http://ecsp.si.edu>.

## PECS News

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*The Woodrow Wilson International Center for Scholars*, located in the Ronald Reagan Building in the heart of Washington D.C., was founded in 1968 by Congress as the nation's memorial to President Woodrow Wilson. Through its renowned Fellows program and a range of regional and functional programmatic activities, the non-partisan center fosters scholarship and dialogue in the humanities and the social sciences. As such, The Wilson Center serves as an ideal meeting place for scholars and practitioners of widely divergent ideological and professional backgrounds. Meetings are marked by free intellectual exchange, reflecting a tradition of bringing together people who differ in discipline, profession, and nationality, but who share an interest in a subject and in having their views challenged in lively debate. The Wilson Center is directed by The Honorable Lee H. Hamilton and its Board of Directors is chaired by Joseph A. Cari, Jr., Esq. Prior to becoming Director, Lee Hamilton served for thirty-four years as a United States Congressman from Indiana. He served as a member of the Committee on Foreign Affairs, now the Committee on International Relations, for his entire tenure.

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**Environmental Change and  
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Since October 1994, the Woodrow Wilson Center's Environmental Change and Security Project (ECSP) has provided specialists and interested individuals with a "road-map" to the myriad conceptions, activities and policy initiatives related to environment, population and security. The Project pursues three basic activities: (1) gathering information on related international academic and policy initiatives; (2) organizing meetings of experts and public seminars; and (3) publishing the *ECSP Report*, *The China Environment Series*, and related projects. ECSP is directed by Geoffrey Dabelko and housed in the Wilson Center's Division of International Studies—headed by Robert S. Litwak. ECSP explores a wide range of academic and policy-related topics: various theoretical linkages among environment, population and security; how environment, population and security ideas are nested in the broader debates over redefining security; the ways in which policymakers in the United States and other countries are utilizing these ideas and making related policies; and how governments, NGOs, businesses, and other organizations respond to the causes and symptoms of environmental and demographic issues.