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## ECSP Meetings

# Environmental Security: A Developing Country Perspective

featuring **R. K. Pachauri**, Director, Tata Energy Research Institute (TERI) and  
Vice Chairman, Intergovernmental Panel on Climate Change (IPCC)

and **Richard Elliot Benedick**, Deputy Director, Environmental and Health Sciences Division, Pacific Northwest  
National Laboratory and President, National Council for Science and the Environment

sponsored by the Environmental Change and Security Project

“**N**ational security” is not simply a measure of military power or geopolitical strength—it also has major social, cultural, and human dimensions and implies a basic subsistence level and sustainable livelihoods, according to Dr. R.K. Pachauri, Director of the Tata Energy Research Institute in New Delhi, India. Pachauri discussed the concept of environmental security and what it means for the “silent majority” of the earth—the poor of the developing countries. Ambassador Richard Benedick served as discussant.



R. K. P.

For the 2.8 billion people who live on less than \$2 a day, environmental conditions and personal health are intimately linked to economic status. But where precisely is the nexus

between poverty and environmental stress? Do we understand the links between poverty and natural resources? Can the poor take steps to ensure environmental security? For Pachauri, asking such questions is a critical step towards understanding the link between environmental security and poverty.

Pachauri broadly defined “environmental security” as the minimization of environmental damage and the promotion of sustainable development, with a focus on transboundary dimensions. “Environmental stress”—an important factor in this equation—is caused both by environmental resource scarcity (such as deforestation) and also by environmental resource degradation (such as polluted water). Economic vulnerability and resource dependency play key roles in the link between environmental change and the potential for violence and insecurity in the developing world. Developing countries also usually lack the infrastructure and institutions to respond to crises, thereby increasing the chance of violence. The majority of such disputes thus far have been solved amicably, but

Pachauri stressed that this might not be the case in the future.

Pachauri then identified five areas where poverty has either exacerbated or been exacerbated by natural resource stress. First, the continuing struggle to provide food and basic needs is increasing land degradation in the developing world. (In India, for instance, TERI researchers found that twenty-seven percent of soil cover currently suffers from severe erosion.) Second, worsening pollution increasingly impacts air quality, with vehicular traffic and industrial expansion the key contributors. Acid rain resulting from such pollution has become a critical issue in the South Asia region. Third, world climate change that has led to a rise in both temperature and sea level holds dire consequences for South Asia coastal regions. In Bangladesh, for example, hundreds of people are killed every year by a monsoon and flood cycle which has become more severe due to changes in sea-level and climate changes. Fourth, both water quality and quantity are at risk due to land-use changes, deforestation, and polluted waters both locally and across national borders. TERI has found that per capita water availability in India has declined from 6,000 cubic meters per year to 2,300 cubic meters per year in only fifty years. Finally, deforestation (due to agricultural expansion and trade in forestry products) is yet another challenge for South Asia and other developing regions. Over the last fifty years, forest cover in India has dwindled to less than fifty percent, and forest lands have been diverted to settlements, agriculture, and industry.

Before moving on to solutions, Pachauri argued the importance of understanding poverty as more than merely a lack of income. Poverty is people’s lack of ability to retain control over their living conditions. Thus, if a community (whether rural or urban) lacks empowerment to live in a way that is sustainable, poverty results. Other conditions (such as a lack of property rights; unsustainable resource exploitation; lack of

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Hilary French, a prolific author on environmental issues, presented the findings of her new World Watch Institute Press book (*Vanishing Borders: Protecting the Planet in the Age of Globalization*) to a broad audience of students, academics, policymakers, and representatives of international nongovernmental organizations as well as private industry. French's book attempts to answer two related questions: What is the impact of globalization on the environment? And which policy responses are needed to address this impact?

French called "globalization" a term not universally understood, and defined it as the increased flow of goods, ideas, and earth changes across international borders. She then identified four such "flows" that have an impact on the health of the planet: (1) rapid growth in trade; (2) capital flows; (3) ecological flows (such as invasive species, air, and water pollution); and (4) the flows of information (such as e-mail and the Internet). According to French, these flows present both broad challenges and significant opportunities for citizens and policy makers alike.

French cited three such challenges. First, the current economy is environmentally unsustainable, and globalization is further exacerbating its devastating impact. Second, hazardous industries are increasing in those countries with weak environmental standards and lax enforcement ability. Third, concerns about how environmental accords such as the Kyoto Protocol might retard economic competitiveness are hampering efforts to address climate change. But French cited current opportunities as well, including: (a) alternative power sources (such as wind power in India); (b) natural

mental movements). French pointed out the irony of the 1999 Seattle protesters using the very technology that they condemned in widening their call for action against globalization.

Finally, policy challenges lie ahead. French argued that environmental reform is needed within most global economic institutions, from the World Trade Organization to the World Bank to private lenders and investors. International environmental treaties also must be more specific than current ones, which are vague and/or lax in their monitoring and enforcement standards. And the role international nongovernmental organizations (NGOs) play in global governance must be recognized through procedural rights and increased partnership among the private sector, NGOs, and governments.

A lively discussion session followed, with many participants citing the role of other factors in this globalization and environment relationship, including population growth and migration, international crime rings, human health consequences, the attention (or inattention) of the media, and whether or not a global consensus exists on these issues. In response, French

argued that government must play a crucial role in managing globalization, and that capacity-building is being hampered by societal and governmental institutions that lack the wherewithal and/or the political will to address some of the above concerns. French also eloquently outlined some of the principle concerns that environmentalists have with globalization and identified some key

## From The Field

### Global Urban Health and Megacities

*Brian Hubbard, University of Michigan International Development Associate  
placed with the Centers for Disease Control*

During 1998, The National Center for Environmental Health (NCEH)—one of Centers for Disease Control's ten major organizational/programmatic components—developed its strategic global health plan. As part of this process, the Center set its four highest global priorities, including: (a) childhood lead poisoning; (b) water/sanitation/hygiene; (c) urban health and megacities; and (d) micronutrient malnutrition. The goal of working with the University of Michigan and an International Development Associate was to substantially advance NCEH's agenda related to global urban health/megacities. Proposed activities of the Global Health Office of the NCEH involved addressing urban health data needs at various levels. The focus included both secondary and primary data collection, data collection on cities as a whole, and intraurban environmental health data and mapping. The Global Health Office also wanted to develop opportunities for primary urban environmental and health data collection. As a University of Michigan International Development Associate, I was invited to participate in the collection, assessment, analysis, presentation, and use of global health data that would be obtained from multilateral agencies, nongovernmental organizations (NGOs), and foreign governments.

After arriving at the NCEH's Atlanta based offices, my initial activities focused on the development of a global urban health database. The idea was to continue the research of the office that had concentrated on collecting environmental, demographic, economic, and health indicators on global megacities. Specifically, the goal was to collect data at a disaggregated level so that research could more easily be focused on intraurban disparities in health status. While working with secondary data sources in the Atlanta offices, two separate opportunities arose that would allow the office to collect primary data.

The first of these opportunities was located in Lima, Peru, where CARE/Peru had received funding from the CARE-CDC Health Initiative (CCHI) for the project, "Enhancing the Programming of Urban Environmental Health in Peru." The major project goals were: (1) to identify and analyze the major urban environmental health problems in poor peri-urban neighborhoods with a specific focus in the district of San Juan de Lurigancho in Lima and the city of Iquitos;

and (2) to develop strategic and operational plans to improve the quality of life for the poorest sectors of the Peruvian population. The project also had a number of specific objectives: (a) to create an inter-institutional committee to improve environmental health (CIMSA) that would be made up of representatives from local public and private organizations working in San Juan de Lurigancho and Iquitos; (b) to work with CIMSA in diagnosing local environmental health problems; (h Tw[(in d



## Book Review

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The three institutional sectors that were considered to most strongly interact with urban population-environment dynamics and impact the quality of life include:

- Transportation sector (vehicle growth, passenger travel pattern, and road accidents)
- Social services (health, education, and family planning)
- The Social-Political-Economic-Cultural System (SPECS)

*Five Cities* gathers quantitative and some qualitative data since 1970 on the seven variables for the cities under study as well as information on their rates of birth, death, and migration; it then projects trends to the year 2020 based on the data. Ness and Low used the computer program STELLA (which utilizes time series information) to model each city's possible population-environment trends. For example, the flows of births, deaths, and migration can be factored together and used to project a variety of possible scenarios of future population growth.

Despite its initial impression of simplicity, the methodological section of the book does demand several readings, for it is not readily apparent how the model is *specifically* capturing the interaction of population dynamics with the environmental and institutional variables. In other words, while the model is titled "urban population-environment dynamics," the text explanation and figure of the model appear to address mainly environmental and institutional dynamics. Only in some of the case studies does it become clear that the authors focused on how population change was impacting on or interacting with the seven variables. The case studies also clarify how major shifts in population can work through social or economic institutions to influence human health positively or negatively. For example, massive in-migration to a city can overwhelm the social service sector and lower its ability to provide sufficient health-care services.

The unstated belief in *Five Cities* appears to be that population change is *the* defining factor for quality of life. The book's analysis and model would have had greater clarity, however, if it had been clearly stated that population change is the driving force for nearly all the variables in the model. While the model is a dynamic one, population change in the case studies appears to be acting as both a dependent and an independent variable. Feedback effects are clearly taking place, and these need to be captured in future iterations of the model. In the future, AUICK researchers may wish to focus on parts of this current model to construct more detailed feedback loops. A good example for this elaboration would be the model designed by Catherine Locke, et al (Catherine Locke, W.

Neil Adger, and P. Mick Kelly. 2000. "Changing Places Migration's Social and Environmental Consequences." *Environment* Vol. 42 (7):24-35.), which delineates the social and environmental impacts of migration.

At the end of each case study, the authors utilize the assembled environmental, institutional data and interviews with local urban administrators to make an assessment of how the population and environmental trends are impacting the quality of life in each city. Quality of life represents the outcome of the dynamic interaction of these variables. In the opening chapter presenting the model of urban population-environment dynamics, however, this "quality of life" concept was somewhat loosely defined. Only at the end of the book (p. 260) do the editors present much clearer criteria for this variable: its components are health, cleanliness of air and water, educational opportunities, ease of transportation, the quality of government services, and available housing. Again, if these explicit criteria been introduced earlier in the book it would have helped to clarify the model.

The least explained (and subsequently, the least explored) variable of the model in *Five Cities* was the broadly defined Social-Political-Economic-Cultural System (SPECS). This component is meant to capture the arena in which policy decisions that affect environmental and institutional sectors take place. To capture these qualities of the urban policy environment, the AUICK researchers aimed to include information on the urban political and administrative systems as well as discussion of how culture shaped the definition and execution of authority.

Some of this SPECS information was scattered throughout the case studies, but it was only directly addressed in a very short analysis in the next to last chapter of the volume. Ness and Low explain how the SPECS evaluation (particularly its descriptions of the political dynamics between the central governments and the urban areas and within the urban governments) could be viewed as criticism of the government. The editors understandably did not wish such remarks to be associated with specific authors, since the main goal of this volume is to encourage urban governments to collect

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programs in addition to what the national government contributes. Sisulu also publicly addressed the controversy over Mbeki's questioning of the link between HIV and AIDS earlier this year. She said that the president was misunderstood and that he was simply calling for a comprehensive solution, a theme she reiterated throughout this forum.

Some countries have succeeded in bringing HIV/AIDS rates down and can serve as models for other countries. Fauci said that private organizations have partnered with the governments of Uganda and Senegal to focus on education, testing, and condom distribution. Senegal has implemented a comprehensive treatment program for all sexually-transmitted diseases, including HIV/AIDS.

Fauci noted that in the United States, the NIH spends 12 percent of its entire budget (some \$2.1 billion) on HIV/AIDS research. Currently, 17 HIV drugs have been approved and in use nationwide. In addition, pharmaceutical companies have paired with government agencies to increase availability of treatment.

Sisulu appealed for international cooperation in confronting the Southern African HIV/AIDS crisis. "I want to underscore the need to increase partnerships and collaborative action," Sisulu said, "and to respect and accept the fact that African countries...are doing the best we can with the limited resources that we have. Therefore, work with us! Work with us so that we are able to work with our people. We, as a government, cannot manage this pandemic on our own."

Sisulu added that Southern African countries oppose additional loans to deal with HIV/AIDS because loans only lead to more debt and dependency. She urged the international community to assist the region in a sustainable way. Fauci suggested partnering nongovernmental and governmental organizations to make HIV/AIDS drugs deliverable and usable in developing countries.

Sisulu also emphasized the need for HIV prevention campaigns to target men more effectively. Fauci agreed that men should share the burden of prevention, adding that something must be done to help change the mindset of how men view and treat women in these countries.

Dellums suggested a Marshall Plan approach (the 1948 U.S. plan that sent billions of dollars of foreign aid to Western Europe in the wake of World War II) to the crisis. He proposed a large-scale public-private partnership that would infuse billions of dollars into Southern Africa to improve roads, health care, and education as well as to provide training for program sustainability. His plan also contains a debt forgiveness component in order to

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trators. The compilation of such a rich array of data for each city also provides a valuable source of material for future researchers interested in these cities. If this volume were to be used as a textbook for a development and environment course, this lack of in-depth information on political dynamics could be supplemented by a comparative Asian politics text.

## F. CONCLUSIONS

The majority of *Five Cities* is devoted to the five case studies, presenting data and projections of trends for population, transportation, energy consumption, social services, economic growth, and environmental quality. The AUICK researchers have worked quite closely with the urban administrators in each of the five cities for a number of years, which explains how they succeeded in gathering an impressive amount of data for each of these sectors. While the five cities examined in this study differ in terms of natural resource base as well as political and socio-cultural backgrounds, as one moves through the case studies it becomes clear how the urban managers in each city all face some similar challenges in balancing population and environmental pressures.

Where concise numerical data were missing (most notably from Cebu City and Khon Kaen), the researchers used interviews with local administrators to help build estimates for some demographic and environmental factors. While the severe gaps in data in cities such as Cebu may weaken the ability to create reliable projections, this paucity of information underlines a serious challenge urban administrators face in many developing countries—planning without sufficient information. In all five cities under study, urban migration and the extension of city boundaries was not systematically tracked. The researchers were thus forced to make estimates on the flows of migration. Such estimates on migration trends potentially can help city managers to better plan for health care and education provision.

Methodological challenges and critique of model design aside, this volume presents a succinct history and a well-balanced overview of the past development trends in five diverse Asian cities. A major strength of the study is that it builds on previous AUICK research in these cities and drew in a large number of collaborative partners to collect data on demographic, environmental, and economic trends since 1970. With such a rich amount of information, each case study provides insights into each city's historical background and structure of the urban administration. Each chapter also includes a brief discussion of culture and customs that strongly influence demographic trends, the treatment of women, and political decision making. This large amount of information on environmental, population, and institutional trends was used to inform a short analysis of the quality of life at the end of every chapter.

In the Kobe case study, the quality of life analysis concluded that “[t]he population-environment relationship in Kobe has been a benign and productive one. The population has grown substantially while the environment has become healthier” (p. 240). It is then briefly mentioned that much of this success is attributed to the progressive thinkers within the Kobe city government and active participation of the citizens in shaping their urban management. Unfortunately, there are few details on the activities of the citizens. The analyses for each city could have benefited from discussion of the roles citizen groups and other non-state actors (e.g., the news media) play as catalysts for some of the positive changes taking place.

Short anecdotes scattered throughout the volume provide unique insights into the challenges urban administrators are facing in these rapidly growing Asian cities, such as how the Korean government's imposition of green belts around cities has both increased the quality of life but also severely restricted urban planning flexibility. Another example is how the lack of land for development has driven up land prices in Pusan, which in turn has

## Project News

### UPDATE

- Staff changes at ECSP:
  - In October 2000, S L was promoted to Deputy Director.
  - In January 2001, R L replaced Jessica Powers as Editor.
  - In January 2001, R replaced Karin Mueller as Production Editor.
- Please note that I 6 of the ECSP Report is now available online. The PDF file can be found on our Web site at [http://ecsp.si.edu/Ecsp\\_pdf.htm#report6](http://ecsp.si.edu/Ecsp_pdf.htm#report6).
- ECSP has recently received \$50,000 from USAID Office of Population through a cooperative agreement with the M P F P to work on issues relating to population, environment, and health. We will be undertaking specialized programming over the next 18 months to two years to explore this particularly fascinating nexus of issues.
- The Wilson Center's *Dialogue* program and ECSP have produced a of the September 2000 meeting on HIV/AIDS in southern Africa highlighted earlier in this issue. Copies are available by contacting ECSP directly. In addition, you can view the video online at <http://wwics.si.edu/NEWS/aids.htm>.
- ECSP staff members will take part in the upcoming I S A annual convention in Chicago, 20-24 February 2001. ECSP materials and staff members will be at the Woodrow Wilson Center booth in the convention's exhibition hall. More information on the ISA convention is available at <http://csf.colorado.edu/isa/chicago/>.
- ECSP is benefiting from a number of Wilson Center Fellows and Public Policy Scholars currently in residence at the Wilson Center. K , formerly of the American Electronics Association, is writing on trade and the environment. E M of Brown University is writing on hunger and food security. M of Brown University is writing on urbanization, environment and development. M F , formerly of Georgetown University, is writing on demography and health in the former Soviet Union. D R , formerly of the Council on Environmental Quality, has also joined the staff as the Flum Scholar to study and facilitate strategic and long-range planning within government. All of these scholars and practitioners have contributed directly to ECSP activities.

## Environmental Change & Security Issues Forum

The Environmental Change and Security Project (ECSP) is pleased to announce its new e-mail forum for environment, population and security-issues-ECSP-FORUM. This forum, which operates via e-mail, serves as a means for practitioners, scholars and policymakers to participate in a dialogue with others in the community. The purpose of the ECSP-FORUM is to provide a forum for discussing relevant issues and research, posting current policy questions, and listing relevant policy, scholarly and teaching resources. Accessible from the ECSP website or by e-mail, it is a convenient and resourceful tool for all interesting in the topics of environment, population and security. Discussions will be archived and fully searchable through the ECSP website, providing a useful reference point for accessing information at a later date. There is no charge to subscribe.

To subscribe to the ECSP Forum, send an e-mail to [listproc@listproc.net](mailto:listproc@listproc.net) and

- 1) Leave the subject heading blank
- 2) In the text box, type sub ECSP-FORUM your name. For example, sub ECSP-FORUM Jane Doe

For more information, please visit our website at <http://ecsp.si.edu/listserv>.

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EDITOR  
Shanda Leather

PRODUCTION & DESIGN  
Richard Thomas

ECSP Staff:  
Geoffrey D. Dabelko  
Robert Lalasz  
Shanda Leather  
Richard Thomas  
Jennifer Turner  
Clair Twigg  
Simona Wexler

Environmental Change and  
Security Project  
The Woodrow Wilson Center  
One Woodrow Wilson Plaza  
1300 Pennsylvania Avenue, NW  
Washington, DC 20004-3027  
Tel: 202-691-4130  
Fax: 202-691-4184  
E-mail: [ecspwwic@wwic.si.edu](mailto:ecspwwic@wwic.si.edu)  
Internet: <http://ecsp.si.edu>

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Environmental Change and  
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Since October 1994, the