We want to promote an ecohealth approach that will act before the epidemic,” says Dr. Roberto Bazzani. He and Dr. Ana Boischio are program officers at IDRC in charge of supporting research using the ecohealth approach to combat vector-borne diseases in Latin America and the Caribbean and around the world.

Dengue is a vector-borne viral disease transmitted through female Aedes mosquitoes. Dengue itself is not a serious illness, but persons contracting it for a second, third, or even for the first time, may develop dengue haemorrhagic fever—a potentially lethal complication. According to the Tropical Disease Research program at the WHO, dengue affects over 50 million people annually and has become pandemic, with an estimated 2.5–3 billion people at risk.

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Building on excellence: a community of practice for ecohealth—toxics in Latin America and the Caribbean (COPEH-TLAC)

With a strong foundation of organization and experience, and a wealth of expertise and enthusiasm at hand, COPEH-TLAC hopes to change the world for the healthier.

COPEH-TLAC is an interdisciplinary network that promotes ecohealth research, on toxic substances in the environment that compromise human health. Members include researchers, policy makers, and NGOs, from South and Central America, the Caribbean, Mexico, and Canada. Its goal is to strengthen cooperation between researchers in Canada and the Latin America and Caribbean (LAC) region, as well as linking research results, policies on health and environment, and social actions.

“The idea with all of this is to further the ecohealth approach,” explains Dr. Donna Mergler of l’Université du Québec à Montréal. “We’re trying to integrate all these aspects together and do relevant, transdisciplinary work that is useful for both policy makers and science.”

COPEH-TLAC focuses on toxic substances, health effects, and better management of exposures. Traditional, single discipline approaches do not address the complex relationships between toxic substances, environment, and health, nor do they integrate research and community level action. “Just saying that mercury isn’t good for you isn’t very useful for those who have to eat fish for survival,” Dr. Mergler says. “We want to know all the pathways between the source of toxic substances and humans, to intervene and propose interventions at community and policy levels.”

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New leader for IDRC’s ecohealth team

IDRC’s Ecosystem Approaches to Human Health Program Initiative will enter a new phase in July 2006, when Dr. Dominique Charron joins as team leader.

Dr. Charron, who holds a PhD in Epidemiology and a Doctor of Veterinary Medicine degree from the University of Guelph, served most recently as a senior epidemiologist with the Public Health Agency of Canada, and as research manager for a Canadian government program that explores the impacts of climate change on infectious disease.

Dr. Charron’s involvement with the IDRC goes back to her participation in the International Forum on Ecosystem Approaches to Human Health in Montreal in 2003, and her association with projects in Brazil and Colombia that sought to understand ecosystem dimensions of dengue infection.

In her current position as Adjunct Faculty in the Department of Population Medicine at the University of Guelph, Ontario, Canada, Dr. Charron has taught several courses on the linkages between the health of the ecosystem and that of human populations.
Editorial
Targeting communicable diseases
By Jean Lebel
Director, Environment and Natural Resource Management
International Development Research Centre

After decades of attempts to control them, communicable diseases are still a major barrier to development. This edition of Health Environment: Global Links highlights some persistent diseases that are being addressed through the common lens of an ecosystem approach to human health.

As conventional models of health care move beyond treatment and prophylaxis to embrace disease prevention/management, research and practitioners increasingly point to the fact that a wide variety of health conditions are linked to social and environmental factors and emphasize the need to consider ecosystem dynamics and acknowledge social as well as biophysical factors.

At minimum, a broader approach to communicable diseases can be as simple as veterinary practices that control disease transmission between animals and humans, or use of treated bed nets as an alternative to medical treatment.

But the root causes of many communicable diseases can be linked to deforestation, climate change, shifts in land use, or other forms of environmental degradation, coupled with social factors such as migration, urbanization, food production, and poverty.

The ecosystem approach to human health embraces the complexity of those factors and promotes research and intervention methods to match. By attacking many different facets of a particular problem, bringing science together with policy makers and front-line communities, an ecosystem approach points the way toward practical and sustainable interventions that do generate tangible results.

The ecosystem approach has already been adopted in many parts of the world to address communicable diseases such as malaria, dengue, and Chagas, with promising results. Mexico, for example, has been able to significantly reduce malaria incidences in Oaxaca State while eliminating all uses of DDT. The lessons of the project are now being introduced across Central America. Similarly, a growing number of projects on Chagas and dengue point to the potential of the approach to significantly reduce the disease.

Nowhere is this shift in emphasis more important than in the current preparations for a global influenza pandemic. Specific interventions may be focusing on human factors, human contact with domesticated fowl, or public health systems. But little has been said about the relatively recent practice of raising chickens along known migratory routes, thereby exposing them to pathogens that are old news in wild flocks. To address these challenges, IDRC’s recently-launched new initiative in Asia will focus on key policy and research issues from a systems approach, looking at environmental factors, production and marketing systems, and animal and human health as well as the economic factors associated with the spread of the epidemic.

The body of research that brings together these biomedical, veterinary, environmental, and social factors is relatively new, but it holds enormous promise to anticipate and contribute to preventing future outbreaks of communicable diseases.

There is clearly more to be done. But this is a truly exciting time for ecohealth practitioners, as a growing number of projects demonstrate the potential of the approach to controlling communicable diseases.

Launching a community of practice for ecohealth in Middle East and North Africa (COPEH-MENA)

Leaping across geographic and disciplinary boundaries is not effortless—but for COPEH-MENA, the future is bright.

The development of the community of practice began at a peer review workshop in Cairo, Egypt, in January 2005, when the participants discovered numerous points of overlap in their research. “When we presented our work, we discovered that teams from Morocco were doing work in the same area and were a year ahead,” explains Ali Mokhtar of the Near East Foundation.

The participants decided to formalize this fruitful co-operation, and the result was COPEH-MENA, a network of ecohealth practitioners interested in addressing environmental challenges to human health through knowledge sharing and institutional collaboration across national boundaries.

Continued on page 3
COPEH-MENA (cont’d)

With support from IDRC and the Ford Foundation office in Egypt, COPEH-MENA was formally established in September 2005 with teams from Jordan, Lebanon, Egypt, and Morocco, representing research institutes, universities, and NGOs. The network aims to provide numerous benefits for the region and its members, such as improving ecohealth research capacity; fostering collaboration and capacity building among researchers, practitioners, and policy makers; and providing access to otherwise unavailable resources, such as research publications. Initially, COPEH-MENA will thematically focus on one of the most pressing issues in the region—water resource management to enhance human health and well-being.

Perhaps more importantly, the network will seek out young researchers, who “are usually excluded,” explains Dr. Lamia El-Fattal of IDRC. “They don’t have a space of their own, and have little chance to break into the research field.” COPEH-MENA provides fledgling researchers with a chance to participate in transdisciplinary, action-oriented research.

Leaping across boundaries is not effortless, of course. Researchers, practitioners, and policy makers in the MENA region are accustomed to a more national, sectoral approach, and the interdisciplinary, community-action level research of the network’s members is unusual for this region. The challenge for COPEH-MENA is, therefore, to demonstrate the benefits of the approach to all concerned. Furthermore, as a new network, the COPEH faces the need to attract new members, and to balance the needs of the COPEH with individual commitments.

Regardless of these challenges, the future of the COPEH looks bright, and the network is actively pursuing its goals. Planned activities include developing regional training modules for ecohealth, developing joint proposals and pursuing links with other donors to fund new ecohealth projects in the region, and creating an online forum for exchanges. The network will also provide mentorship to young researchers through internships, map the policy landscape on health and environment in the region, and create an inventory of the different experts and key stakeholders involved in the health-environment field in the participating countries.

The network plans to hold a regional workshop for current and prospective COPEH-MENA members in the near future. “This is a golden opportunity for professionals to share in an environment that is supportive of resource advancement and research,” says Mokhtar. “The more members participate, the more benefit for everyone.” More information is available at www.copehmena.org.

Innovative joint program draws to a close

The Ecosystem Approach to Human Health Regional Funds program, a successful initiative that has supported ecohealth research and policy application, has come to a close. Participants met at workshops in Senegal and Guatemala to discuss the results of the program, reflect on what they learned, and outline the way forward.

The Regional Funds program was developed in 2001 to support field level activities using the ecosystem approach to human health (ecohealth) and encourage its global dissemination and policy application in the Middle East and North Africa (MENA), Central America and the Caribbean (CAC), and West Africa.

The program was a joint initiative between IDRC, the Ford Foundation in Cairo, UNF, UNEP, and the WHO. The program had specific goals and objectives. These included building the capacity of multi disciplinary teams to implement applied, multi-sector projects using an ecohealth framework, through a competitive request for proposals (RFP) program in each region, and to create a critical mass of projects that would demonstrate improved human health outcomes at the community level through ecosystem management. A total of nine projects were supported in different countries including Nigeria, Burkina Faso, Cameroon, Egypt, Morocco, Jordan, Honduras, Guatemala, and Cuba.

The program also sought to strengthen the linkages between ecohealth research, policy, and practice by involving various levels of policy and decision makers in projects, and foster the emergence of knowledge and practice networks to share evidence and highlight policy linkages at the national and global levels.

The MENA and West Africa teams convened in Senegal, while the CAC partners met in Guatemala. Both meetings produced dynamic discussions of the program’s successes, challenges, and the new ideas that had been stimulated by the participants’ experiences. These meetings were an opportunity for all partners and stakeholders to examine the outcomes of the initiative, establish new partnerships, and plan for the future of ecohealth in the different regions, mainly through establishing communities of practice.
COPEH-TLAC (cont’d)

Continued from page 1

COPEH-TLAC is organized into five regions—each led by a Centre of Excellence—whose activities are coordinated through a core group. Each region provides expertise on a specific theme, which it then brings to the network as a whole. For example, Mexico provides expertise on vector-borne diseases, Costa Rica on pesticide use and toxic exposures, and the Andean regional centre addresses issues related to heavy metals and mining.

One of COPEH-TLAC’s advantages is the direct involvement of communities and regional policy makers. “These people have to deal with these problems on a day-to-day basis,” Dr. Mergler says. “If you don’t involve communities and policy makers, you could end up with interesting research that’s irrelevant to everyone else.”

If so much infrastructure, expertise, cooperation, and interest already existed in the region, why was COPEH-TLAC necessary? Researchers collaborated, Dr. Mergler explains, but did not necessarily employ the ecosystem approach or integrate it into their research. “COPEH-TLAC is there to test and advance our thinking on how to integrate this approach,” and to help develop a new and better understanding of the complex relationship between environment and health. “We want to practice what we preach, and put all the theory into practice.”

COPEH-TLAC has set a dynamic agenda to consolidate its broad regional representation. The first Application-Consolidation Workshop for the Central American and Caribbean node was held in April 2006 in Costa Rica, with participants from Dominican Republic, Cuba, Nicaragua, Guatemala, Panama, and Costa Rica. A similar workshop was held in Lima for the Andean region in May with participants from Peru, Bolivia, Venezuela, Ecuador, and Colombia. Similar workshops are scheduled for the other regions. A consolidation workshop bringing in all regions is tentatively scheduled for February 2007 in Cuernavaca, Mexico. For more information, visit: http://www.insp.mx/copeh-tlac

Members of COPEH-TLAC at their first meeting in Lima, Peru, in January 2006

Health ←→ Environment: Global Links wants YOU

This newsletter is intended as a forum for the global community of scientists and practitioners in health and environment. Please send your project information, story ideas, comments, and letters to the editor!

You can reach Health ←→ Environment: Global Links at ecohealth@idrc.ca
“Our contribution is not a toxicology discovery with wide-ranging implications,” Professor Benjamin Fayomi says of his ecohealth-related projects. “Our contribution is an amelioration of everyday living conditions for a population of farmers, not only in terms of their health, but also in economic terms.”

Dr. Fayomi, of the Université Nationale du Bénin, is a professor of Occupational Health and head of the Unit of Education and Research on Occupational Health and Environment (URESTE). Beginning his medical career as a rural physician, Dr. Fayomi went on to specialize in occupational health, agricultural medicine, and clinical toxicology, and obtained his doctorate in medicine focusing on pesticides in 1994.

Dr. Fayomi has used this expertise in several major projects aiming to improve human health in Africa. One such is FORST (Formation à la recherche en santé au travail en Afrique), an Internet distance-learning curriculum he established to bring occupational medicine training and research to francophone African countries. Today, FORST is the most comprehensive online network of occupational medicine specialists in Africa, with participants from more than a dozen countries.

Dr. Fayomi has also been involved in a project examining the links between urban agriculture, pesticide use, and human health in Cotonou, Benin. More specifically, Dr. Fayomi is looking into the effect of pesticides on human health, focusing on long-term immunological, clinical, and biomolecular impacts, and on the integration of this work using an ecohealth approach to pesticide contamination.

His research is particularly important for Africa because, while Southern countries use only 25% of the pesticides sold worldwide, they suffer 99% of worldwide deaths due to intoxication by phytosanitary products. “It means that we are the smallest consumers, but the biggest victims of the consequences,” Dr. Fayomi says. And since Benin is one of Africa’s largest cotton-producing countries, and many of its citizens work in the areas Dr. Fayomi examines, his research has personal as well as economic, political, and health implications.

Dr. Fayomi is also involved in the emerging community of practice in ecohealth (COPEH) in West and Central Africa, through his participation in an innovative project to institutionalize the ecohealth approach within universities in four countries in the region (Benin, Burkina Faso, Côte d’Ivoire, and Cameroon). As he states, “For ecohealth activities to be sustainable, they must be included in the curricula of training and research institutions.”

To that end, university representatives and academic institutional leaders in West Africa are promoting the creation of a regional inter-university course curriculum on ecohealth, to be integrated in various doctorate programs within the health and environment fields, and their recognition by the African and Malagasy Council for Higher Education (CAMES) jury in francophone Africa. Institutionalizing the ecohealth approach will promote its integration within existing university programs, allow formal collaborations, and build capacity for ecohealth research.

“The ecohealth approach, today, is more than a concept to be taught or applied in research,” Dr. Fayomi says. “It is becoming a tool that can be used by institutions for their development, by countries, and by Africa.” And through his own research, and participation in the COPEH in West and Central Africa, Dr. Fayomi is working to improve human health in Africa and beyond.
**Dengue and Chagas: (cont’d)**

*Continued from page 1*

The transmission of dengue is related to ecological and social factors, Dr. Bazzani explains. The vector mosquitoes breed in water ponds that can occur in urban areas, especially in marginal areas, such as in backyards of households, or in public places. Uncovered water receptacles, where populations lacking adequate water distribution store their water, can also become breeding sites for mosquitoes that transmit dengue.

To control and eliminate the dengue mosquito, it is crucial to cover or empty exposed water storage containers. However, the social factors that encourage disease transmission can make combating it a challenge. “It’s hard to convince people to be careful with water storage, if they don’t perceive the disease as a serious health problem, and if they face other life-struggling realities,” Dr. Boischio observes. Furthermore, individuals living in poor areas may have more pressing priorities than disease prevention programs.

“Why would people worry about dengue control and prevention when they face violence in the streets?”

The tight link between social and ecological factors in the transmission of dengue makes the ecohealth approach a valuable tool for those trying to prevent it. “If you don’t alter the dynamic of what’s happening in the cities, you’ll still have a good environment for the mosquito to breed,” Dr. Bazzani says. “In real terms, the community and other related stakeholders where we work must be involved if we want success.” Education and interventions at the household level are especially important.

Successful strategies must also engage high-level policy makers such as ministries of health and environment, as well as local decision makers on issues such as water and sanitation. A dialogue between communities and decision makers could result in preventive behaviour. “For example, if people with limited water distribution have access to information about water availability, they could plan better for water storage,” says Dr. Boischio.

Chagas is another vector-borne disease whose social and ecological factors are closely linked. Chagas is found only in Latin America, and is transmitted by blood-feeding “bugs” that live in thatched roofs and in the cracks of poor-quality houses. Chagas is primarily a rural phenomenon that affects the populations who inhabit these shoddy dwellings.

Unlike dengue, which is visible but usually mild (except for cases of dengue haemorrhagic fever), the initial phase of Chagas is often symptomless. This “silent” phase may last months, years, or even decades after the initial bite. During that time, however, the disease invades organs such as the heart, intestines, and oesophagus, and ultimately leads to progressive weakness, disability, or death.

“If you look at public health indicators, in the long term, Chagas will disable people for longer than dengue” and have greater economic costs, says Dr. Bazzani. However, because it is “a silent disease of the poor,” there is less attention paid by policy makers and the population at large. As with dengue, those working to prevent Chagas can benefit from an integrated approach such as ecohealth. “If we combine social and housing improvements, we can better control the disease,” Dr. Bazzani explains.

With better knowledge of vector ecology and vulnerability and people’s attitude towards transmission and prevention, ecohealth researchers can develop better tools and responses to vector-borne diseases. “If we act on the social and ecological dynamics, we can control transmission more efficiently and more sustainably,” says Dr. Bazzani.

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**Building capacity, sharing opportunities**

The Ecohealth Research and Training Awards Program has undergone an exciting transition that will aid its ongoing goals of capacity building and promoting the ecohealth approach around the globe.

Established in 1997, the program supports graduate students conducting fieldwork on health and environment linkages in developing countries. More than 48 young researchers from Canada and developing countries have received grants of up to $15,000 each for work that examines the relationships among the environment, human health, and development. The program is an important capacity-building initiative that helps develop young researchers and encourages research in the area of ecohealth.

As of 2006, the operation of the awards program is set to be devolved, from being IDRC based, to a Southern-led initiative. The University of Abomey-Calavi, Benin, and the Instituto Nacional de Salud Pública (INSUP), Mexico, will now host the program in sub-Saharan Africa and the Caribbean, respectively, targeting the grants at students from their regions. This regional approach will not only continue to benefit young ecohealth researchers in developing countries, but will also build local institutional capacity by giving the partner institutions the opportunity to manage their own programs. It is hoped that the awards program will be extended to other areas, including the Middle East and North Africa (MENA) region and Asia, and reopen to Canadian students within the next few years.

*For more information, please visit [http://www.idrc.ca/en/ev-70968-201-1-DO_TOPIC.html](http://www.idrc.ca/en/ev-70968-201-1-DO_TOPIC.html)*
Exploring the links between malaria and agriculture

Researchers from eight projects examining the linkages between malaria and agriculture in Africa met in Dar es Salaam, Tanzania, from November 20–24, 2005, at the Systemwide Initiative on Malaria and Agriculture (SIMA) Progress Review and Synthesis Workshop. Participants reviewed the progress and achievements of their individual projects and assessed the value of the ecosystem approach in malaria research and interventions. The workshop also gave participants a chance to explore new opportunities for collaboration with researchers and donors. More information about SIMA is available at http://www.iwmi.cgiar.org/sima/index.asp

Biodiversity for better nutrition

As part of an initiative exploring how agricultural biodiversity and the ecohealth approach can help counter problems of malnutrition in poor countries, IDRC and IPGRI supported a global stakeholders workshop February 16–17, 2006, in Maccarese, Italy. International experts in areas such as nutrition, health, and agriculture developed priorities for better research on the links between agricultural biodiversity, nutrition, and health; for the creation of policies in health, agriculture, and trade sectors to support the use of a broader range of agricultural biodiversity; and for increased awareness about the relationship between diverse diets and better nutrition. More details about the meeting are available at http://www.ipgri.cgiar.org/Events/nutrition.htm

Consulting on ecohealth in slums

In 2005, IDRC engaged two consultant teams to conduct a situational analysis of the state-of-the-art research on health and environment linkages in slums in Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA). The goal was to define the priority problems that affect the health of people living in slums, as well as identify key issues for ecohealth research. Following these studies, experts met at regional workshops in Cairo, Egypt, in January 2006, and Nairobi, Kenya, in February 2006, to validate the findings and provide concrete recommendations for future directions. Discussions at each workshop were based on the two reports, which explored slum conditions in sample cities in the regions. Reports from the workshops are available at http://www.idrc.ca.ev_en.php?ID=98609_201&ID2=DO_TOPIC

Institutionalizing the ecohealth approach

Academic institutionalization of the ecohealth approach was the goal in Dakar, Senegal, at the March 2–3, 2006, meeting of various francophone universities from Central and Western Africa. Institutional and academic leaders and practitioners met to promote links between the environment and health. Participants also laid out plans for a regional doctoral program in environment and health, to be established by universities in Benin, Cameroon, Côte-d’Ivoire, and Burkina Faso. At the meeting, the attending university presidents and directors signed an agreement signifying their commitment to the road ahead.

Planning for pandemics

As has been observed, “the pandemic clock is ticking—we just don’t know what time it is.” The Wilton Park Conference: International Collaboration on Planning for Pandemics, held March 2–5, 2006, addressed the challenge of developing local, national, and international priorities to face avian influenza. Participants discussed the status of current national and international pandemic preparedness plans, discussed priorities, and emphasized the need for regional cooperation. Presentations addressed issues such as the need for public education about avian flu, and issues of equity regarding the worldwide distribution of potentially limited antivirals and vaccines. More information about the conference is available at http://www.wiltonpark.org.uk/

Call for proposals draws great interest

The inaugural call for letters of intent of the Teasdale-Corti Global Health Research Partnership Program has generated an overwhelming response. Two hundred and fifty research teams from Canada and around the world have expressed their interest in participating in this new and innovative program. Approximately 19 per cent of the proposed research programs address issues relating to the interaction of health, environment, and development. The announcement of selected teams to go into the next phase is available at http://www.idrc.ca/en/ev-97636-201-1-DO_TOPIC.html

New ecohealth internship 2007

Coming events

12–16 June 2006. 11th International Conference of the Secrétariat international francophone pour l’évaluation environnementale (SIFÉE): Development, Environment and Health, Bamako, Mali. The conference will examine the impact of human activity on the living environment, and of pollution and environmental factors on human health. The conference also aims to propose solutions and tools for evaluating the status and living conditions of populations, in ordinary circumstances as well as in crisis situations. Information:
http://www.sifee.org/bamako2006.htm

13–18 August 2006. XVI International AIDS Conference, Toronto, Canada. Under this year's theme of “Time to Deliver,” AIDS 2006 will be the world’s gathering of stakeholders involved in the global response to HIV/AIDS, and an important venue for the release and discussion of key scientific developments in the fight against the disease. Information:

21–25 August 2006. 11th World Congress on Public Health, and the 8th Brazilian Congress on Collective Health, Rio de Janeiro, Brazil. Participants with interest in public health will exchange theories and practices, present the results of experiences in the field, and renew global public health commitments. Proceedings will focus on the social, economic, and political barriers to health in a globalized world, and on the united global commitment to pulling those barriers down. Information:

2–6 September 2006. International Conference on Environmental Epidemiology & Exposure, Paris, France. This will be an opportunity for the scientific community concerned with the future of the environment and with public health to question how the precautionary principle—whereby exchanges between scientists and risk managers are expected to take place in a transparent and publicly visible manner—may change the way scientists work. Information:
http://www.paris2006.afsse.fr/

1–3 October 2006. International Workshop on Environment Health in Latin America: Developing a Gender Perspective, Chihuahua, Mexico. The goal of the conference is to promote the development and integration of a gender perspective in research on environmental health in Latin America. Participants will pursue the agreements and activities developed at the previous meeting in Sonora, USA, in February 2005. Information:
http://redgsa.uach.mx/prog2006.html

7–10 October 2006. 1st Biennial Conference of the International EcoHealth Association: Forging Collaboration Between Health and Ecology, University of Wisconsin Madison, USA. The conference will bring together a diverse international audience concerned with sustainable health and the environment to promote a better understanding of the linkages between ecology and health. It will advance emerging interdisciplinary scientific work in the integrated areas of human health, wildlife health, and ecosystems. Information:
http://www.ecohealth.net/Conference/site/index.html

29 October – 2 November 2006. 10th Global Health Forum, Cairo, Egypt. Under the theme “Combating Disease and Promoting Health,” the conference will bring together policy makers, development partners, and the users of research to debate critical gaps and energize movements for action to address the health needs of the poor and marginalized around the world. Information:
http://www.globalforumhealth.org/Site/004__Annual%20meeting/001__Home.php

15–19 December 2006. Biennial Conference of International Society for Ecological Economics on “Ecological Sustainability and Human Well-being,” New Delhi, India. The goal of the conference is to promote understanding between economists and ecologists in the development of a sustainable world. Information:

Communicable Disease Call for Proposals
The Ecohealth Program at IDRC will soon launch a request for proposals (RFP) to support new projects that use the ecosystem approach to human health framework in exploring integrated health and environment participatory strategies for the prevention and control of communicable diseases in Latin American and the Caribbean (LAC). More information will be available in June 2006 at