

## Profile

# From Multiple Voices to a Common Language: Ecosystem Approaches to Human Health as an Emerging Paradigm

Renaud De Plaen and Catherine Kilelu

*Ecosystem Approaches to Human Health Program Initiative, International Development Research Centre (IDRC), 250 Albert Street, P.O. Box 8500, Ottawa, Ontario K1G 3H9, Canada*

**Abstract:** The International Forum on Ecosystem Approaches to Human Health, held in Montreal, May 18–23, 2003, was one product of a new paradigm or framework linking health, ecosystems, and sustainable development that emerged in recent decades. This profile aims to provide a backdrop for the contents of this supplementary issue by outlining some of the key principles of the Ecosystem Approaches to Human Health (Ecohealth) framework. It also discusses some of the activities supported by the Ecosystem Approaches to Human Health Program Initiative of the International Development Research Centre (IDRC) to build on the success of the Forum. In doing so, the intention is to frame the 2003 Forum as one in a series of opportunities to reflect and learn from precedents of research and practice from an ecohealth perspective and to foster the development of a community of practice on Ecohealth (COPEH). The profile not only places the contents of the supplement and the Forum within a larger context, but also provides an overview of other IDRC activities that are building capacity for future research and practice, and are strengthening the emerging COPEH.

**Key words:** ecohealth, community of practice, capacity building, networking

## BACKGROUND

Inspiration for publishing this supplementary issue came from numerous exchanges, conversations, and demands in which scholars, applied scientists, policymakers, and practitioners from both developing and developed countries expressed great interest in further exploring and advancing ecosystem approaches to human health. The articles included in the supplement come from presentations at the International Forum on Ecosystem Approaches to Human Health, held in Montreal, May 18–23, 2003. The conference brought together researchers, practitioners, and policy-

makers who shared a common interest: the realization that classic disciplinary approaches to environment and health relations are insufficient to comprehend the complexity of factors influencing human health and the desire to transcend disciplinary background to develop new paradigms. The Forum created a space for participants to discuss the potential of the ecosystem approaches to human health framework (Ecohealth) as an alternative hallmark (systematic, theoretical, and practical) for improving human health and well-being.

Understanding of human health in terms of its interaction with the human environment has traditionally been strongly colored by the experience of medical and, to a lesser extent, environmental approaches. Biomedical approaches have primarily focused on pathogens, the spread

of infectious diseases, and the health of individuals, mostly disconnected from their environment. Yet the world is subject to the influences of many complex factors that can either undermine or promote the health of all living beings and that cannot be understood or controlled by a medical approach alone, however sophisticated it may be.

Environmental approaches to human health have primarily focused on the identification of interactions between specific human health indicators or outcomes, such as the incidence of cancer, and exposure to specific elements of the environment, such as dioxin. However, because of the complexity of the relationships between living and inert components of the ecosystem, the simple observation of cause and effect consequences in these hierarchical, interlocking systems generally proved insufficient to provide a proper picture of the impact of human intervention on both the health of the ecosystem itself and the human beings who inhabit it.

Over the last three decades, researchers from the health and environmental sectors have tried to overcome some of the limitations of dominant biomedical and environmental approaches in the study of health and environment relationships. The focus of these attempts has been to look at those relations from an integrated perspective that transcends disciplinary boundaries. An important contribution to linking environmental changes and ecosystem disruption to human health problems and sustainability issues has been Ecosystem Health (Rapport et al., 1999; Rapport, 2000). Ecosystem Health focuses on the maintenance and restoration of the world's ecosystems as an essential determinant of human health and considers human health as one of the elements of ecosystem sustainability. While addressing the interactions between the health of human populations and that of their ecosystem from a systemic/holistic perspective, Ecosystem Health has sometimes been considered eco-centric since it defines the improvement and maintenance of the health of the ecosystem as its key objective, rather than that of human health.

Another contribution to linking ecosystem and human health has been the emergence of the Ecosystem Approaches to Human Health (Ecohealth) paradigm (Forget, 1997; Forget and Lebel, 2001), which emerged in the late 1990s. This approach builds on the ecosystem health model by recognizing that human health and well-being are intimately tied not only to the health of ecosystems that sustain human life, but also to complex interactions between environmental-sociocultural and economic factors.

While debate on the differences between the two approaches (Ecosystem Health and Ecosystem Approaches to Human Health) continues, many argue that such differences are mainly semantic and that, at their core, the two approaches share more commonalities than differences. They both attempt to transcend disciplinary boundaries and promote systemic approaches to the links between human health and the many components of the ecosystem. The difference between the two paradigms may lie in the lens used to address human health: Ecosystem Health adopts a lens that emphasizes the importance of achieving a healthy ecosystem as a condition to good human health, whereas Ecohealth emphasizes the potential of ecosystem management to improve the health of human populations. Most importantly, however, both approaches are dynamic and enable progress to be made through the synergies of complementary approaches rather than defining and defending disciplinary, sectoral, and intellectual territory.

## ECOSYSTEM APPROACHES TO HUMAN HEALTH

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In the sense proposed by Forget and Lebel (2001), ecosystem approaches to human health (Ecohealth) represents a set of methodological and conceptual approaches. These approaches seek to better comprehend the complex interactions between the various component of the ecosystem (biophysical, socioeconomic and cultural), and how these interactions influence the prevalence of health problems and well-being among human populations. They also seek to identify ecosystem management strategies that contribute to improving the health and living conditions of human populations and the sustainability of the ecosystem in which they live (Forget and Lebel, 2001).

The approach “recognizes that there are inextricable links between humans and their biophysical, social, and economic environments that are reflected in individual/communities’ health” (Bonet, quoted in Lebel, 2003, p. 2). The Ecohealth approach focuses on understanding (i) the interactions between social and ecological systems in defining key determinants of human health in particular settings, and (ii) the impact of human activities on the sustainability of these processes (Lebel, 2003). The approach aims at improving human health through an understanding of how socioeconomic conditions mediate the dynamics of health–environment relationships and its interactions with external processes, in order to identify the

pressures and impacts on subsystems, and through this, the impacts on human health and well-being. It emphasizes human health and well-being as the ultimate focus of the approach. The approach uses a broad and integrated conceptualization of health that captures its social dimension. Health is seen as a resource for everyday life (WHO, 1986)—a means, but also an end in itself. Health promotion therefore goes beyond a personal lifestyle approach to include a more political and social one.

The Ecohealth approach is a process-oriented and dynamic way of understanding and solving problems, which can be constructed in various contexts, with varying scales, and different intended outcomes. “Ecosystems” in this approach are defined relative to the research problem. They refer to the social and ecological contexts, both on a temporal and a spatial scale, of human lives. Human activities (or stressors) alter these contexts and have positive and negative effects on individuals and communities involved.

The approach currently has three core elements or pillars: transdisciplinarity (see Becker and Jahn, 1999, for a discussion on transdisciplinarity in the context of linking social and ecological systems); social justice and gender equity; and stakeholder participation. These elements are key to improving health and well-being as they allow for an understanding of changes that explicitly link social and ecological systems. These core elements, however, continue to evolve as we learn what is required to understand the interactions between society and science, and among various subdomains of the ecosystem.

## THE INTERNATIONAL FORUM ON ECOSYSTEM APPROACHES TO HUMAN HEALTH

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The International Forum on Ecosystem Approaches to Human Health had several key characteristics that contributed to developing and advancing ecosystem approaches to human health. First, the conference brought together researchers, practitioners, and policymakers from all over the world, as evidenced by the international range of papers in this supplement. Second, attendees at the conference, in general, shared an important common platform—their recognition that classic disciplinary approaches to environment and health relations are insufficient to comprehend the complex factors influencing human health and their desire to transcend disciplinary background to develop new paradigms. Third, the Forum

provided an opportunity to share ideas, test insights, and discuss concrete evidence from case studies with their peers and colleagues. Finally, the Forum created a space for participants to discuss the potential of the ecosystem approaches to human health framework (Ecohealth) as an alternative hallmark (systematic, theoretical, and practical) for improving human health and well-being.

To achieve this, the Forum program was designed to embody the ideals of cooperation and openness central to the development and implementation of participatory and transdisciplinary research. Discussions revolved around knowledge production, the engagement of multiple stakeholders (from communities to policymakers) in the research process, and linking health and environment.

While participants recognized that there is still a lot to be learned in order to ensure the sustainability and efficacy of ecosystem approaches to human health, the Forum demonstrated that Ecohealth produces good science and can contribute to the formulation of more effective policies. The Forum produced an excitement over the possibilities and promises of this new approach to understand and influence the web of factors influencing human health. Furthermore, the Forum succeeded in generating interest from various disciplines that recognized themselves in the approach and from a network of stakeholders from the North and the South, open to cooperation and recognizing that progress in human health requires overcoming disciplinary boundaries.

## EMERGING COMMUNITY OF PRACTICE IN ECOHEALTH

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The Forum provided a platform for discussing issues related to the global community of practice on Ecohealth (COPEH) with many like-minded participants present. Dialogues at the Forum revealed that a significant contribution of the Forum was to crystallize thinking around health–environment linkages and create cross-disciplinary dialogues between scientists from these fields, from the North and the South. It also discussed areas and opportunities for improvement.

One of the recommendations of the Forum was that, in order to build on the success and on the momentum generated by the Forum, it was necessary to upscale ecohealth approaches and successfully engage the policy process. One way to do this is to support emerging community of practice on Ecosystem approaches to human health, through networking and capacity building activities.

In response to these recommendations, IDRC has been supporting various initiatives and platforms that contribute to the promotion of Ecohealth approaches and enable partners to further discuss and exchange on the potential and challenges of the approach to address health and environment issues from a systemic/holistic perspective. This section highlights some of the activities that have been initiated to strengthen the COPEH. It also illustrates ways in which opportunities have been seized to enable engagement with those outside the COPEH, but doing similar work globally, in efforts to foster collaboration and expansion of a general community of practice on Ecohealth.

### **Thematic Networking Activities**

Over the last year, IDRC supported a variety of activities focusing on specific themes with the objective of further encouraging exchanges on the approach between various partners, contributing to the reflection and evolution of the approach, and further assessing the potential contribution of ecohealth to the production of knowledge on the multiple linkages between ecosystem components (social, cultural, economic, environmental, and epidemiological) and human health and well-being. Meetings and networking activities supported by IDRC on specific themes such as malaria, dengue, and environmental pollution are illustrated here and summarized in Table 1.

Building on 4 years of support for the establishment of a regional network on the links between malaria and agriculture in sub-Saharan Africa—the System-Wide Initiative on Malaria and Agriculture (SIMA)—and several projects in eastern and southern Africa, IDRC sponsored a technical consultation organized jointly by SIMA, the Liverpool School of Tropical Medicine, and the International Water Management Institute (IWMI) in Pretoria, South Africa. The meeting looked at the development of an evidence-based approach to evaluating and controlling urban malaria, and attempted to assess the importance of urban and peri-urban agriculture. Ecohealth sponsored the participation of researchers outside the community of practice, as well as that of partners from SIMA, to provide them with an opportunity to share information on their work and initiate collaboration with other institutions working on similar issues.

IDRC is also developing joint initiatives with other international organizations to address the resurgence of communicable diseases such as dengue fever. After its contribution to an international conference on dengue in

Cuba, in 2004, which built on the expertise developed by IDRC partners on dengue in Latin America and the Caribbean (LAC), IDRC is now trying to strengthen its link with international organizations, through a new collaboration with the United Nations Children and Education Fund (UNICEF) United Nations Development Program (UNDP)/World Bank/WHO Social, Economic and Behavioural Research (SEB) Special Program for Research and Training in Tropical Diseases (TDR). The new initiative aims to expand activities on dengue in Asia and LAC, and will develop strategic social research to further investigate the various determinants of the existence and persistence of communicable diseases.

Taking advantage of the “3rd Week of Health and Environment” organized in Brazil by the Fundação Oswaldo Cruz (FIOCRUZ), in September 2004, IDRC supported a 2-day satellite meeting on environmental pollution that brought together a number of researchers from FIOCRUZ and Ecohealth partners from LAC countries. The meeting discussed the potential for several approaches to address environmental pollution, with an emphasis on Ecohealth, as well as the lessons arising from several case studies on the impact of intensive agriculture and mining activities on human health. The participation of IDRC’s Ecohealth team in two roundtables—one on “the impact of new technologies on human health” and the second one on “health and environment in LAC”—provided an opportunity to engage participants on the links between health and environment.

Rather than focusing on specific themes, some meetings supported by IDRC are oriented to focus on methodological principles of the Ecohealth approach. For example, in June 2004, Ecohealth supported the organization of a special session on ecosystem approaches to human health at the 8th Biennial Scientific Conference of the International Society for Ecological Economics (ISEE). Researchers from Asia, Latin America, and Africa presented their work and participated in a discussion on the lessons, challenges, and gaps in addressing the economic dimensions of human health and well-being through the use of Ecohealth approaches.

Similarly, in an effort to enhance researchers’ capacity to critically understand and analyze the importance of gender dynamics, particularly for women, IDRC will support, for a 2nd year, the International Women and Health Meeting (IWHM) in India in 2005. The theme of the 10th IWHM is “Health Rights, Women’s Rights Challenges and Strategies in a Changing World.”

**Table 1.** Thematic Networking Activities of the IDRC Ecohealth Program Initiative

Thematic and regional focus	Event or activity	Key participants
Dengue fever and DHF in LAC	International Congress on Dengue in Cuba, May 2004 Collaboration with the UNICEF/UNDP/World Bank/WHO SEB TDR to expand activities and support dengue research in Asia and Latin America	Representatives of six Ecohealth-sponsored projects
Environmental pollution and impacts of new technologies on human health LAC	Week of Health and Environment in September 2004, including: Roundtable discussion on health and environment (including impacts of new technologies on human health) Two-day satellite meeting on Ecohealth approaches to address environment pollution	FIOCRUZ, Rio de Janeiro, Brazil, and Ecohealth partners from LAC
Malaria in urban areas of Africa	Technical Consultation on the Strategy for Assessment and Control of Urban Malaria, Pretoria, South Africa, December 1–5, 2004	SIMA, Liverpool School of Tropical Medicine, and IWMI
Economic dimensions of human well-being	8th Biennial Scientific Conference of the ISEE, June 2004 IDRC sponsored researchers to attend the meeting who presented their work and discussed lessons, challenges, and gaps in addressing economic dimensions of human health through using ecohealth approaches	Representatives from Ecohealth-sponsored projects in Ecuador, India, and Ethiopia

DHF, dengue hemorrhagic fever; FIOCRUZ, Fundação Oswaldo Cruz; IDRC, International Development Research Centre; IWMI, International Water Management Institute; ISEE, International Society for Ecological Economics; LAC, Latin America and the Caribbean; SEB, Social, Economic and Behavioural Research; SIMA, System-Wide Initiative on Malaria and Agriculture; TDR, Special Program for Research and Training in Tropical Diseases; UNDP, United Nations Development Program; UNICEF, United Nations Children and Education Fund; WHO, World Health Organization.

## Training and Capacity Building

Many participants to the Forum stressed the importance of training and capacity-building activities, especially for young researchers, as fundamental to build research capacity in the South and strengthen the emerging community of practice on Ecohealth. The range and scope of training and capacity-building activities is indicated by the summaries in Table 2.

IDRC's competitive Ecohealth Health Graduate Awards is one of the initiatives available to train young researchers on Ecohealth. The awards are provided to enable graduate students from Canadian and developing-country universities to conduct fieldwork using the Ecohealth approach, examining the relationships between the

environment, human health, and development from a holistic perspective. Winners of the competition are invited to attend a 1-week training workshop in Ottawa to deepen their understanding of the concept of Ecohealth and consolidate their research design with the assistance of a team of specialists. Each year, there is a guiding theme for the awards; this year's theme has been set around the urban context. Following suggestions at the Forum, the number of awards has been increased from 6 to 10 and, for the first time in 2004, an additional travel grant has been introduced to enable students to present their findings at international conferences and symposiums.

Regional courses on Ecohealth (summer and fall institutes) represent another modality used by IDRC to respond to the identified need for training and capacity

**Table 2.** Selected Training and Capacity-building Activities

Training and capacity-building activity	Participants and applicants	Key partners and contributors
Ecohealth graduate awards for field work (2004)	Graduate students from Canadian and developing country universities to conduct fieldwork using the Ecohealth approach, examining the relationships between the environment, human health, and development from a holistic perspective	Ecohealth specialists from new and existing Ecohealth projects
Ecohealth regional courses: Training workshops in LAC (2003–2004)	Public health professionals (from Cuba, Mexico, Chile, Argentina, Guatemala, Ecuador, and Colombia) attend Ecohealth Summer Courses as part of the refresher program on Public Health and Epidemiology offered at the INSP	INSP
Ecohealth regional courses: Sub-Saharan Africa (2003)	Seven teams from five countries (Benin, Ivory Coast, Burkina Faso, Cameroon, and Togo) selected to participate in the course	ISBA Course facilitators and trainers came from projects funded by the Ecohealth West African Regional Fund (supported by IDRC, UNEP, and WHO)
Strengthening the emerging community of practice in LAC (2004 for selection in 2005)	Development and submission of joint proposals by researchers from Canada and LAC to further consolidate and expand the global COPEH in LAC	CIHR

building of the COPEH. Ecohealth courses have been developed to support teams of established researchers who are interested in deepening their understanding of Ecohealth approaches. In partnership with the National Institute of Public Health (INSP) of Mexico, Ecohealth has supported, for 2 years in a row, training workshops for public health with the aim of stimulating critical Ecohealth thinking among researchers and develop research capacity in the use of the Ecohealth approach. Similar regional training courses on Ecohealth have been organized in sub-Saharan Africa by the Institut des Sciences Biomédicales Appliquées (ISBA) and Ecohealth-IDRC. Plans to develop similar courses in Eastern and Southern Africa and Asia are underway.

Project development workshops are yet another innovative training and capacity-building activity. The origi-

nality of these workshops resides in the fact that participating teams must comprise researchers from various disciplinary backgrounds (environmental, biomedical, social), which must develop a common vision of the problem in order to jointly develop their proposal.

The above activities illustrate some of IDRC's responses to the Forum recommendations for consolidating the COPEH through networking and capacity building. Ecohealth also launched the first of a series of regional initiatives to further support the COPEH. This joint initiative between IDRC and the Canadian Institutes for Health Research (CIHR) aims to encourage the development and submission of joint proposals by researchers from LAC to further consolidate and expand the global COPEH in the region. The specific objectives of this initiative are to establish collaboration and strengthen coop-

eration between scientists in Canada and in LAC, and assist with the development of research networks to stimulate critical thinking and capacity building within research institutions related to ecosystem approaches to human health. The aim of this community of practice is to advance the Ecohealth research framework (concepts, methods, and tools) and to strengthen the links between research, policy, and action. The initiative will be expanded to other regions in the near future.

### Linking Research to Policy and Practice

The challenge of linking Ecohealth research to policy and practice was clearly underscored at the Forum. Several participants highlighted the potential of the application of Ecohealth approaches on a small-scale, but pointed out the challenge of scaling up activities at national and regional levels, and to the need to ensure buy-in by policies. In response to this concern, IDRC is now exploring the possibilities of linking its activities to global, regional, and national initiatives on human health and sustainable development.

IDRC is also already contributing to existing global initiatives such as the Health and Environment Linkages Initiative (HELI) of the World Health Organization. Engaging Ecohealth research with policy processes is an essential condition to ensure a greater upscaling of the use of Ecohealth approaches, which offer a unique contribution to understanding the health and environmental linkages and to act on them.

## PLANNING THE SECOND INTERNATIONAL FORUM ON ECOSYSTEM APPROACHES TO HUMAN HEALTH

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Following the success of the first International Forum and the interest expressed by participants, plans are underway in the organization of a second International Forum, tentatively scheduled to take place in 2009. As the events above have highlighted, IDRC is keeping the momentum and, in the spirit of collaboration, other institutional partners doing complementary work globally are joining in. The coming years offer the promise of significant advancement and strengthening of the understanding of ecosystem approaches to human health, through mutual exchange, and learning within and beyond the expanding community of practice.

For additional information on Ecohealth approaches, visit our website at: [http://web.idrc.ca/en/ev-3314-201-1-do\\_topic.html](http://web.idrc.ca/en/ev-3314-201-1-do_topic.html) or send an e-mail to: [ecohealth@idrc.ca](mailto:ecohealth@idrc.ca)

**Résumé:** Le Forum international sur les approches Écosystèmes et santé humaine qui a eu lieu à Montréal du 18 au 23 mai 2003 a été une retombée d'un nouveau modèle ou cadre mis au point au cours des dernières décennies afin de relier la santé, les écosystèmes et le développement durable. Ce profil vise à brosser une toile de fond pour les articles publiés dans ce numéro supplémentaire en soulignant quelques principes clés du cadre des approches Écosystèmes et santé humaine (Écosanté). Il présente aussi quelques-unes des activités appuyées par l'Initiative de programme Écosanté du Centre de recherches pour le développement international (CRDI) afin d'étendre le succès du forum. Notre objectif est de présenter le Forum 2003 comme une d'une série d'occasions pour réfléchir et tirer des leçons des recherches et d'expériences antérieures sous la perspective écosanté et ainsi encourager le développement d'une communauté de pratique sur les approches écosystémiques (COPEH). Le profil situe non seulement le contenu du numéro supplémentaire et le forum dans un plus large contexte mais offre également une vue d'ensemble des autres activités du CRDI qui accroissent les capacités pour entreprendre des recherches et des expériences, renforçant la COPEH naissante.

**Mots clés:** écosanté, communauté de pratique, renforcement des capacités, réseautage

**Resumen:** El Foro Internacional sobre los Enfoques Ecosistémicos para la Salud Humana, celebrado en Montreal del 18 al 23 de mayo 2003, fue el fruto del nuevo paradigma o marco conceptual que vincula la salud, los ecosistemas y el desarrollo sostenible, el cual ha surgido en décadas recientes. Este artículo trata de proveer una base contextual para los contenidos de este suplemento, proporcionando algunos de los principios claves de los enfoques ecosistémicos para la salud humana (Ecosalud) y discute algunas de las actividades que apoya la Iniciativa Programática del Centro Internacional de Investigaciones para el Desarrollo de Canadá (CIID) sobre este enfoque, las cuales son llevadas a cabo a partir del éxito del foro. Nuestro objetivo es presentar el Foro de 2003, como (uno) algo entre una serie de oportunidades para reflexionar y aprender sobre la investigación y práctica precedente desde la perspectiva de Ecosalud y fomentar el desarrollo de una comunidad global de prácticas en Ecosalud (COPEH). El artículo no solo situó los contenidos del suplemento y el foro dentro de un mayor contexto, si no que también proporciona una descripción de otras actividades del CIID que están creando capacidades para futuras investigaciones y prácticas, y fortaleciendo el surgimiento de la COPEH.

**Palabras clave:** ecosalud, comunidad de prácticas, fortalecimiento de las capacidades, trabajar en red

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