

External Review of the IDRC Ecohealth Program Initiative: Final Report

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November 2008



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Acronyms

ALAMES	Latin American Association of Social Medicine
APAIR	Asian Partnership on Avian Influenza Research
BoG	Board of Governors
CAMES	African and Malagasy Council on Higher Education
CGIAR	Consultative Group for International Agriculture Research
CIDA	Canadian International Development Agency
COP	Communities of Practice
COPEH	Communities of Practice in Ecohealth
COPEH-LAC	Communities of Practice in Ecohealth – Latin America and the Caribbean
CSPF	Corporate Strategy and Program Framework
DALYS	Disability Adjusted Life Years
DDT	Dichlorodiphenyltrichloroethane
DESS-MEQUE	Diplome D'Etudes Superieures Specialisees – Management Environmental et Qualities des Eaux
DPSEE	Driving forces, Pressures, State, Exposure, Effects
EH	Ecohealth
EHPI	Ecohealth Program Initiative
ENRM	Environment & Natural Resource Management
ERA	Environmental Risk Assessment
EU	European Union
FAO	Food and Agriculture Organization
FIOCRUZ	Fundação Oswaldo Cruz / Oswaldo Cruz Foundation
GEF	Global Environment Facility
GENA	Gestion environnementale et alimentaion (Natural resource management and nutrition)
ICMM	International Council for Mining and Metals
ICT4D	Information and Technologies for Development
ILRI	International Livestock Research Institute
IRDC	International Development Research Centre
LAC	Latin America and the Caribbean
MENA	Middle East North Africa
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
NIH	National Institute of Health
PAD	Project Approval Document

PAHO	Pan American Health Organization
PBDD	Partnership & Business Development Division
PIs	Program Initiatives
POP	Persistent Organic Pollutants
PPB	Programs and Partnership Branch
RMIA	Risk Management and Internal Audit
SEP	Social and Economic Policy
SUS	Sistema Unico Saude
TDR	Tropical Disease Research
TOR	Terms of Reference
UAM	Universidad Autonoma Metropolitana
UFB	Federal University of Bahia
UNEP	United Nations Environment Program
VP	Vice President
VP-P	Vice President, Programs
WEF	World Economic Forum
WHO	World Health Organization

Acknowledgements

The External Review Team members wish to thank the many project and program officers, team members, partners and community leaders with whom we met in Africa, Asia and Latin America (listed in Annex 4). Their generosity of time and insight throughout the evaluation deepened our understanding of the scope and accomplishments of the Ecohealth Program. The passion and commitment they demonstrate as they work to improve the lives of people and the ecosystems on which they depend earned our profound respect and continuing gratitude.

In particular we are grateful to Ernest Dabire, Gilles Forget, Emmanuel Ngnikam, Benjamin Fayomi, IDRC West Africa, Hein Malle, IDRC Asia, Roberto Bazzani, IDRC Latin America, and Lamia El-Fattal, IDRC Middle East, North Africa for facilitating our regional field visits and to the Ecohealth program officers at IDRC Ottawa for their helpful discussions on the successes and challenges that they have faced in taking the second generation of IDRC work on Ecohealth to another level. Dominique Charron, Ecohealth Program Initiative Leader, and Zsofia Orosz, Research Officer, provided ongoing assistance in helping us to access and to make sense of the considerable documentation on Ecohealth as well as responding to our requests during the Review. Program Officers Ana Boischio, Jean-Michel Labatut, Andrés Sanchez, and Renaud De Plaen made time to meet with us to discuss the current achievements, challenges and future directions of the Ecohealth Program.

We have gained valuable insights into the significant journey of the Ecohealth Program since its inception in 1996 from Jean Lebel, Director, ENRM, and from Gilles Forget who was the first Team Leader of the Ecohealth Initiative. We recognize and appreciate their long standing commitment to this field of work and thank them for sharing their views on the successes, challenges and future prospects for the Initiative.

Rohinton Medhora, Vice President, Lauchlan Munro, Director of Program and Policy, and Sharon Messerschmidt, from Risk Management and Internal Audit, provided helpful context for us on the overall Corporate Strategy and Programme Framework. Tricia Wind, Senior Evaluation Officer, assisted by Kaia Ambrose and Elizabeth Mohan, provided guidance and support for the Review Team, patiently answering questions throughout, and facilitating our travel. Halskha Graczyk and the staff of Dr Silbergeld's office at Johns Hopkins University provided valuable support to the work of the Review Team at several key times.

We sincerely hope that our findings help to strengthen the work of the IDRC Ecohealth Program Initiative and contribute to the strategic oversight, management and direction of the Centre in achieving its Mission.

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IDRC Ecohealth Program Initiative External Review

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- Top left: Flower cut industry. Tabacundo District. Departamento of Pichincha. Republic of Ecuador. Photo credit: J. Finkelman.
- Top right: Backyard poultry. Village in Ha Tay Province. Ba Vi District. Socialist Republic of Vietnam. Photo credit: J. Finkelman
- Bottom left: Paved walkways, an effective development action resulting from EHPI in Melen, Yaoundé, Cameroun. Photo credit: J. Zinsstag
- Bottom right: Members of the Central Africa COPEH with member of the review team, visiting the Houéyho vegetable growers in Benin, Cotonou. Photo credit: J. Zinsstag

Executive Summary

The 2008 External Review of the IDRC Ecohealth Program Initiative assessed the performance of the Ecohealth Program Initiative as a whole, the extent to which it is meeting its objectives and achieving its results as set out in the Prospectus for 2005-2010, and the influence of programmatic results on policy, capacity and the health of people and ecosystems. Using a mixed methods approach to data collection, the Review Team interviewed a range of key stakeholder groups from IDRC Senior Management to field project research teams and partners, as well as visiting clusters of project in Asia, Africa and Latin America that aimed to influence policy and scale up ecohealth research project results.

The Review Team recognizes that IDRC, from its inception, has established and maintained a unique position in the landscape of funders and actors in development research by increasing the knowledge base relevant to anticipating, diagnosing, and solving problems in developing countries. The Review Team found that the Ecohealth Program Initiative since its inception has enriched IDRC through the development of the ecohealth concept and its emphasis on the holism of environment and health, the importance of community based participatory research, the need to respond to locally identified problems, the commitment to influence on policy and behavior, and attention to gender and social aspects.

The strength of the Ecohealth Program Initiative and the resilience of this concept over the years is reflected in the growth of ecohealth as an academic discipline, the existence of an academic journal in the field, successful international meetings, the formation of networks of Ecohealth practice, and the adoption of the Ecohealth perspective by other agencies and funders. The expertise and commitment of the Ecohealth Program Initiative Team to the concept, projects and stakeholders has undoubtedly played an invaluable role in the successes and growth of the program.

The Review Team found much good work taking place and concludes overall that the Ecohealth Program Initiative continues to be a well founded and important program for IDRC and for the ecohealth and development community at large and deserving of continued support.

While generally moving in the right direction, the pace of progress appears to be slower than envisaged in the Prospectus and the challenges of consolidation and responding to large new partnerships require strengthened systems, skills and capacities that are currently not in place. Renewed and focused efforts are needed to further the evolution of the Ecohealth concept, ensure scientific quality of research, consolidate its successes and learning, scale up its scope of work from specific projects to sustainable and extended impact, and to achieve greater policy influence.

That the PI Team and the Program Director of ERNM are well aware of the importance of these issues gives the Review Team confidence that with adequate focus and support these challenges can be tackled successfully.

The Review identifies the following issues as key to address if the PI is to advance successfully to its next level of achievement and to fully respond to IDRC's corporate objectives:

1. Lack of clear theories of change and measurable outcomes in the design of projects, especially related to achieving core objectives of health promotion, capacity building, and policy influence
2. Insufficient engagement of policy actors (and in some cases the full range of multidisciplinary actors) in the design and implementation of work;
3. Uneven scientific quality of outputs and lack of a systematic peer review strategy
4. Inadequate strategies for effectively capturing, analyzing, communicating and disseminating research and policy results.

Going forward into a new cycle of programming at the PI and Senior Management level the Review makes detailed recommendations in Section 6 to strengthen the Ecohealth Program Initiative and take it to its next level of success, and to enhance IDRC's reputation in this important area of work. In summary the recommendations focus on:

1. Furthering the concept of Ecohealth as discipline and practice
2. Clarifying the niche and role of IDRC in Ecohealth and ensuring visibility for IDRC
3. Strengthening the quality of research results and the evidence base of Ecohealth
4. Supporting program capacities to manage the consolidation and shifts of the Ecohealth PI
5. Developing a more integrated strategy for achieving and scaling up capacity building at the individual, institutional and network levels
6. More purposefully supporting policy influence as a key management skill and expectation of works and policy framework.

1. Introduction

This Report presents a summary of the key results of the 2008 External Review of the IDRC Ecohealth Program Initiative. Commissioned by the IDRC Evaluation Unit in February 2008 the Review focuses on the overall performance of the Ecohealth Program Initiative in the context of IDRC's corporate goals and objectives.

As the third independent review of the Initiative undertaken since its inception in 1996 the stated purpose of the Review is to inform the development of next Ecohealth Prospectus and the IDRC Corporate Strategy and Program Framework (CSPF III). The intended users of this Review are IDRC's Board of Governors (BoG) and Programs and Partnership Branch (PPB) management as well as the Program Officers of the Ecohealth Program Initiative. The Review is intended to assist in accountability, guidance for future programming and strategy, and improving program effectiveness.

Due to the restrictive page limitation of the report only a top line summary of findings is possible to present in this report. Readers wishing to know more about the context of the review, the specific findings by region and the review component on scientific quality are requested to consult the detailed Annexes to the Review Report. The Review Team regrets that it was not possible to present this information in a more integrative manner.

2. Objectives of the Review

The overall objectives of the Review are to provide an independent assessment of the performance of the Ecohealth Program Initiative as a whole, the extent to which it is meeting its objectives and achieving its results as set out in the Prospectus for 2005-2010, and the influence of programmatic results on policy, capacity and the health of people and ecosystems. The detailed Terms of Reference are contained in Annex 1. In addition, the Review is to provide recommendations aimed at strengthening the Centre's support of research for development with specific reference to Ecohealth and the Centre's programming in general. The Review is not designed to assess the individual projects of the Ecohealth Initiative.

3. Context of the Ecohealth Program Initiative

Annex 3 provides the details of the corporate and programmatic context within which the Review assessed the performance of the PI, namely:

- a. The institutional and corporate context as defined by the IDRC Act, the 2005-2010 Corporate Strategy and Program Framework (CSPF) and the Ecohealth Prospectus. These documents set out the corporate goals which all IDRC Programs are expected to achieve and the specific results and objectives expected of the Ecohealth Program Initiative for the period 2005-2010;
- b. The conceptual framework for Ecohealth which defines the transdisciplinary nature of ecohealth and the spheres within which it is expected to be implemented through program activities, research and academic research grants.

- c. The strategy context for Programs as found in the CSPF, namely the overarching principles that are expected of each Program Initiative.

Of particular importance to this Review is the emphasis placed by the IDRC Act and the CSPF on scientific excellence, partnerships and policy influence. The Corporate Strategy and Program Framework (CSPF) commits to assessing the Centre's performance according to four main criteria¹ – namely, the extent to which the Centre contributes to:

1. Building a favourable environment within which research can be carried out and which provides opportunities for individual researchers in the South
2. Supporting research that is credible, i.e. scientifically valid and methodologically sound;
3. Influencing practices, technologies, policies and laws that contribute to sustainable and equitable development and poverty reduction;
4. Building explicitly Southern agendas into current international policy debates and developmental decision-making at all levels.

Within the context of these corporate objectives and expectations, the Review Team assessed the progress of the Ecohealth Program Initiative in meeting its objectives as set out in the Prospectus for the Ecosystem Approach to Human Health Program Initiative 2005-2010², specifically:

1. Improved understanding of social, political, economic, and ecological interactions and development of knowledge based interventions for improved health and well-being outcomes, through participatory research, led by Ecohealth partners jointly with the local and policy communities, on selected thematic entry points. (*Research and interventions*)
2. More informed policy making and improved policy implementation on issue areas related to health and the environment, fostered through the knowledge generated by research projects, multi-stakeholder processes used, and more broadly, the global and regional communities of practice (networks) Ecohealth supports. (*Strengthening the linkage of research to policy*)
3. A growing body of researchers (including young researchers) capable of designing and carrying out Ecohealth research that is transdisciplinary and participatory, engages multiple stakeholders and addresses gender and social equity analysis. (*Capacity building*)

4. Methodology for the Review

Annex 2 sets out the detailed methodology for the Review including the design of the Review and a detailed Evaluation Matrix. In summary, the Review used a mixed methods approach to collect data on the relevance, effectiveness, efficiency, influence, impact and sustainability of the work of the EHPI as directly related to the Terms of Reference for the Review, including:

1. **Project visits:** Purposeful sampling techniques were used. Interacting with the Ecohealth PI Team clusters of information rich Ecohealth projects in West Africa, Southeast Asia and Latin America were selected. The Review did not aim to select a representative sample of projects, rather projects were selected where Program Officers felt there was the greatest

¹ CSPF 2005-2010, Section 3 para 69.

² Prospectus for the Ecosystem Approach to Human Health Program Initiative 2005-2010, page 6.

potential for policy influence, capacity building and scaling up through networks. Annex 3 contains the list of field projects visited.

2. **Interviews** were conducted with 5 stakeholder groups: 1) field project officers; 2) COP members; 3) Program Officers; 4) strategic partners, co-funders and peer agencies; and 5) IDRC senior corporate managers. A complete lists of those interviewed is contained in Annex 4.
3. **Analysis of scientific quality of project and program outputs** (publications, knowledge products): Project research outputs were collected from all projects visited plus a number of additional outputs provided by the PI, including peer reviewed papers, publications and other products. Online searches were conducted in internationally recognized journals and health literature databases.
4. **Portfolio analysis:** The Ecohealth project portfolio was analyzed from the perspective of projected growth in size, quantity and resource allocation and from the perspective of increased partnerships and co-funding.
5. **Desk reviews** were undertaken of previous evaluations (PI and Centre-wide for trends), program workplans, budgets, Project Completion Reports (PCRs), Centre-wide studies on policy influence, capacity, networks, risk management and partnerships.

5. Findings

A summary of key findings is presented at the level of the program and the corporate objectives of the organization as a whole, not at the project level. Evidence for the findings is derived from the analysis of the results of interviews with 5 stakeholder groups, cluster site visits, analysis of scientific quality of research outputs, project portfolio analysis and document reviews. Details of the evidence is found in Annex 5 and 6 including the results of regional field visits and the review of scientific quality of research products. .

5.1 Relevance and rationale

5.1.1 The Concept of Ecohealth

- All stakeholders groups considered the Ecohealth concept to be relevant to their needs and objectives, and many indicated that the concept should be updated if it is to remain relevant.
- While the Ecohealth concept was generally understood across stakeholder groups, the depth of understanding varied considerably among regions.
- There were conceptual and operational differences in the understanding and application of the foundational elements of the concept (transdisciplinarity, gender equity and the participation of researchers, policy makers and civil society) across stakeholder groups. In particular, the linkage of health outcomes to policy influence and environmental and social and economic determinants was not clear and requires more solid research design.
- Concern was expressed that the strength of the original emphasis on community based participatory research may be compromised by an increased focus of IDRC on more traditional concepts of health research (surveillance, prevention and control of emerging diseases, in particular vector borne) rather than health in its broader context particularly with regard to poverty and social empowerment.

- Concern was expressed that with a shift in corporate strategy and program emphasis to large co-funded projects in infectious disease there is less attention paid to persisting ecohealth issues.

5.1.2 Role, Niche and Value Added of IDRC in Ecohealth

- IDRC's role and niche in Ecohealth is well recognized and appreciated by almost all stakeholders and strong support was expressed for the continued role of IDRC in advancing the field of ecohealth.
- Some stakeholders perceive a shift in IDRC's role, focus and investments in ecohealth and caution that IDRC may lose its niche if it moves too far from the concept of health to disease where it risks becoming a small player and contributor in a large and crowded field.
- The main characteristics of IDRC's value added in the field of Ecohealth are seen by stakeholders as the trust in the nature of their partnership, support for community based participatory research and multidisciplinary action research, an emphasis on the holistic nature of people and ecosystems, the importance of responding to locally identified problems, its commitment to influence policy and behaviour, and its attention to gender and social aspects, and its adherence to continual growth and self renewal.
- Expectations of the delivery of high quality, scalable results are high among some external stakeholders for the new strategic partnerships of the EHPI.

Discussion

The Concept of Ecohealth

There is no doubt in the view of the Review Team that the concept of ecohealth remains a valid and relevant concept to the current development context and to the needs of stakeholders. However to remain relevant and continue to advance the field and reputation of IDRC stakeholders indicated that the concept should be updated as a matter of priority. Publications by Gilles Forget and Jean Lebel³ on the Ecosystem Approach to Health were lauded in 2001 as innovative and cutting edge, however no further major publications of similar depth and scope have been published, nor has there been a systematic review of the overall impact of the concept.

Interviewees cited the need to consider and integrate the work of recent frameworks, including the DPSEE model promoted by WHO⁴ (driving forces, pressures, state, exposure, effects), environmental goods and service, global goods concepts from the Millennium Ecosystem Assessment (MA) and TEEB work⁵, the Burden of Disease (DALY) analyses⁶, definition of development as an expansion of rights and freedoms⁷, a number of systems dynamics,

³ Forget G. and Lebel J. (2001) An Ecosystem Approach to Human Health. International Journal of Occupational and Environmental Health. Supplement to Vol. 7(2). Lebel J. Health: An Ecosystem Approach. Ottawa, Canada: International Development Research Centre (Ottawa), 2002.

⁴ A McMichael, Global Health. Health and Environment in Sustainable Development - Five Years After the Earth Summit. WHO/EHG/97.8

⁵ The Economics of Ecosystems and Biodiversity. Parvan Sukdev.

⁶ Disability Adjusted Life Years (DALYS) World Bank. 1993

⁷ Sakiko Fukuda-Parr. Operationalising Amartya Sen's ideas on capabilities, development, freedom and human rights – the shifting policy. UNDP 2002

vulnerability/resilience and adaptive management approaches, and the role of the private sector⁸. The PI Team indicate they are fully aware of these more recent concepts and that they plan to update the concept for The International Ecohealth Forum in Mexico, December 2008. The Review Team fully supports this intention.

At the field level, the Review Team observed a varying degree of comprehension of the concept. For example, partners and stakeholders in Latin America and West Africa demonstrated a detailed and relatively consistent understanding of the overall concept⁹, while in South Asia the concept was not well understood among project research teams and partners visited. The lack of understanding in the APAIR project grantees is of concern, given the rapid growth of this type of investment for IDRC. The loss of ecohealth conceptual thinking in the avian influenza projects was also noted by peer interviewees.

When exploring the factors that have supported the spread of the concept in different regional contexts, the Review Team noted that in Latin America a strong foundation had already been built prior to and apart from the ecohealth concept (1996) through the social medicine movement of the 1980's and the movement for collective health in many LAC countries¹⁰. As a result when IDRC first extended support to ecohealth activities in LAC the concept was readily adopted and well understood. Moreover there was a strong community of academic and other researchers as well as health practitioners such that projects funded by the Ecohealth PI expanded rapidly and in most cases successfully. Other regions have not had the benefits of the same history and renewed efforts are needed to deepen the understanding and application of the concepts among key stakeholders.

Role, Niche and Value Added of IDRC in Ecohealth

The Review Team found a high degree of respect for and recognition of the role and niche that IDRC's has played and continues to play in Ecohealth. This is confirmed in the results of the IDRC Stakeholder Perception Survey¹¹. At the same time, some stakeholders note changes in the positioning and investments of IDRC in the area of ecohealth and express some concern. They note a decline in investments in the past areas of mining, agricultural / rural development, and urban ecosystems and an increase in support for larger and already well funded projects in the surveillance, prevention and control of emerging diseases, in particular vector borne diseases. With this shift they believe that the approach could evolve more towards a medical model of the ecology of infectious disease and away from the original concepts of the program, in which health is defined more broadly and emphasis is given on the social and ecological dynamics of health and development.

⁸ World Economic Forum (WEF).Partnering for Success. January 2005.

⁹ For example, the Review Team found in West Africa that the EH concept is well understood by researchers who work as multidisciplinary teams in Cotonou (especially with cotton) and vegetable farmers, and in Yaounde (urban communities). Community members emphasize that they are listened to and that they can express their priorities as members of the research groups. Focus groups in Cotonou demonstrated advanced abilities of farmer communities to address locally perceived priorities.

¹⁰ For example, academic institutions like the Universidad Autonoma Metropolitana in Xochimilco(UAM) in México and the Federal University of Bahia (UFB) in Brazil have been pioneers in a new way of understanding and practicing public health, with a greater focus on political, economic and social variables as compared to institutions in the US. The Latin American Association of Social Medicine (ALAMES) created in the early 80s is one of the most important promoters of this concept and approach. In Brazil, "the movement for a collective health" has also fostered the Sistema Unico de Saúde (SUS) i, and the guiding principles of the SUS are compatible with the EHPI values.

¹¹ IDRC Stakeholder Perception Survey, Globescan. Q 16, 18 (a) (b)

The following statements of the value added by IDRC's Ecohealth PI (some are also broadly applicable to the organization as a whole) were offered by stakeholders during the Review:

- a partner that can be trusted and that listens
- its support for systematic participatory and multidisciplinary action research, and in particular its systematic application of the concept of eco-health
- its emphasis on the holistic nature of people and ecosystems
- the importance it places on community based, participatory research, and the need to respond to locally identified problems
- creativity and "venture" based approach to project support
- its commitment to influence policy and behaviour, and
- its attention to gender and social aspects and to continual growth and self renewal.

With respect to profile and recognition, the Review Team encountered field situations where IDRC support had not been recognized in communication material related to some very successful joint projects¹², and conversely, where IDRC signage was very visible in a project that clearly had major public health and occupational safety risks and where such visible association might not be so desirable¹³.

5.2 Effectiveness

The following chapter sets out the key findings of the review at project, program and corporate level with respect to achievement of results, capacity building, policy influence and the quality of scientific results. Specific regional findings and discussion points are found in Annex 6.

5.2.1 Achievement of Results

Delivery and quality of results at project level

- ➔ Many positive examples were found where the Program Initiative and Project Officers have succeeded in establishing and nurturing multidisciplinary teams, expanding the application of Ecohealth concepts, and engaging community leaders in work that has led to inspiring results.
- ➔ Overall however the delivery of results at the project level is mixed and highly variable.
- ➔ The main performance issues affecting the delivery of results appear to be:
 - Lack of clear theories of change and measurable outcomes in the design of projects, especially related to achieving core objectives of health promotion, capacity building, and policy influence
 - Weak engagement of policy actors (and in some cases the full range of multidisciplinary actors) in the design and implementation of work;
 - Uneven scientific quality of outputs and lack of a peer review strategy
 - Weak strategies for effectively capturing, analyzing, communicating and disseminating research and policy results.
- ➔ Of these issues, the uneven quality of scientific results and outputs is of fundamental concern to the PI and IDRC's commitment to scientific excellence.

¹² Rapport Annuel ERA Cameroun 2006 (IDRC mentioned but logo does not appear with other donors); La Gazette du Quartier (5) 2005 ERA Cameroun, Yaounde

¹³ Risk Assessment from Leather Tanneries in Ulaanbaatar (Mongolia) (103053)

- In some cases projects run the risk of achieving development objectives at the expense of scientific objectives and quality of research outputs.
- Overall the Review Team did not find a consistent strategy to gender across the projects visited.

Portfolio level

- The portfolio analysis shows a slow movement towards consolidation of projects and larger projects and co-funding with larger partners as mandated by corporate objectives, however as noted by the PI managers themselves many small activities still remain that require considerable time and effort to manage.
- Overall trends in investments indicate a decline in investments in the areas of mining and agricultural / rural development and urban development and an increase in support for the surveillance, prevention and control of emerging diseases, in particular vector borne diseases.
- New program areas of major global importance such as climate change and emerging infectious disease appear to have been incorporated effectively without losing the distinctive focus of Ecohealth.
- Other than the grants management financial data base analysis (which is good as far as it goes) there is not an adequate data base of portfolio results and regular analysis of results at the portfolio level.

Program level

- The Ecohealth PI Team are well respected among stakeholder groups for their commitment, expertise and leadership in ecohealth¹⁴
- Although committed in the Prospectus, there is not yet adequate program level analysis and synthesis of results and lessons across the PI to guide the consolidation of results, learning, communication among partners and others, and strategic choices for the next phase of Ecohealth PI implementation.
- Systematic monitoring and oversight of project performance across the portfolio by the PI is not adequate to provide sufficient early warning of risks to projects, to track overall progress and learn across the portfolio.
- PI team capacity remain an issue as noted in previous reviews and the CSPF and require attention, including the need for improved capacity in program monitoring and tracking systems, policy analysis.
- The corporate imperatives for consolidation, larger and new partnerships have implications for sustainability of original investments as well as for the types of partners, strategies and projects that are supported in the future. This in turn has implications for the management strategies and skills profiles of staff (communication, relationship and risk management, portfolio analysis, etc).

Corporate level

- There is a gap between the expectations of IDRC's corporate objectives and the capacity, systems and support provided to the PI Team to meet these objectives.
- Risk management approaches and tools are not well know or consistently practiced across the PI and its project teams.

¹⁴ Review Team interviews and IDRC Stakeholder Perception Survey, Globescan Q18 (x) (y)

Discussion

Delivery and achievement of results at field level

Many positive examples were found in field visits where the PI, project officers and project research teams have succeeded in establishing and nurturing multidisciplinary teams, expanding the application of ecohealth concepts, and engaging community leaders in work that has led to inspiring results. Descriptions of findings from Asia, Africa and Latin America are provided in Annex 6.

Assessed against the objectives and results of the Prospectus and the Corporate goals, and the age of the PI and the length of time it has had to establish a basis and standards for the delivery of high quality results, overall the Review Team found mixed and highly variable performance in the delivery and of project outputs in terms of scientific quality and quantity of outputs and engagement of constituencies.

Gender integration and analysis was highlighted as a recommendation for attention in previous reviews along with increased attention to power relationships. The Review Team did not find a coordinated or coherent approach to dealing with gender as an important differential in research projects. The treatment of gender varied across projects and interviewees. Gender issues were included well in some projects, and dismissed in others as irrelevant. In West and Central Africa, the Review Team observed that gender was visibility addressed as an important differential in the research process in 3 of out 10 projects visited even though all the interviewees supported the importance of gender in development research. In addition some interviewees in other regions felt that other factors such as ethnicity, migration and the aging of the population were equally important factors for closer attention.

Some projects visited had managed successfully to engage and maintain **the engagement of the full range of stakeholders** as fundamental to the project's success, however too many projects visited appear to have been developed and implemented by researchers with little or weak involvement of policy and development stakeholders¹⁵. The Review Team appreciates the challenges of engaging the full range of stakeholders and keeping them engaged in a meaningful way throughout the life of the project, however it is clear that the policy influence sought at the PI and corporate level will not be achieved without effectively and sustainably engaging all policy actors.

Among strategic level partners (co-funders, large agency partners, peer agencies) most strongly supported the concept of ecohealth. Several key partners expressed a 'wait and see' approach to their future involvement pending the successful translation of the concept into high quality scalable results in their partnerships. Some stakeholders were also concerned that the original concept may be compromised with the increased focus of IDRC on a more medical model of health research (surveillance, prevention and control of emerging diseases) rather than the holistic concept expressed in the Ecohealth prospectus and by Forget and Lebel.

Program and portfolio performance

¹⁵ Interviewees in Cameroon expressed deep frustration of trying to engage with state and municipal authorities.

The first phases of the Ecohealth Program Initiative (1996-2004) established IDRC's niche in the Ecohealth field and achieved significant success in field projects thereby demonstrating the value of the ecohealth concept. The Prospectus for 2005-2008 sets out a range of programmatic results aimed at taking the Initiative to its next level of development by consolidating results, scaling up knowledge and lessons across the body of Ecohealth experience, and implementing a tested and systematic peer review process for outputs.¹⁶

Overall, the Review Team did not find as much progress towards these programmatic outputs as committed in the Prospectus for this period. The Review Team recognizes the delays and challenges that the PI Team has faced in light of repeated PI leadership changes which may, in part, explain the delays in making greater progress towards the results expected in the Prospectus for this period.

In saying this, the Review Team wishes to be clear that it is evident that much good work is happening in the PI and for the most part moving in the right direction. Consolidation of projects is underway, albeit lagging somewhat, a shift to larger projects can clearly be seen from the portfolio analysis, and the International Ecohealth Forum is scheduled to take place at in December 2008. However many smaller individual projects still remain in the portfolio requiring significant time on the part of PI Officers to manage and oversee, and progress towards Prospectus objectives and outputs has not been as timely as set out in the Prospectus.

Responsibilities for developing, managing and overseeing the performance of a large portfolio, coupled with the pressure of taking on larger partnerships and addressing new emerging issues makes the challenge of 'catching up' to the proposed milestones of the Prospectus even more difficult.

The PI Team is well aware of these challenges. They note in a recent retreat that "we must make very strategic choices for the next three years if we want to deliver on the health outcomes and policy objectives of the prospectus". They also ask legitimate questions of IDRC Senior Management such as "How do we respond to many large project opportunities with limited core funding and with an already full pipeline, and an already overstretched PI Team"?

The Review Team shares the concerns of the PI in this regard, and suggests that a clear management strategy and support from Senior Management is needed for the PI to catch up and meet its milestones as presented in the Prospectus, while at the same time addressing new emerging issues and corporate imperatives of larger partnerships, more complete projects, improving scientific quality, influencing policy and scaling up results.

Looking at the 2007 portfolio analysis data prepared by the PI there was a noticeable shift from the program areas and levels of investment approved in the 2005-2010 Prospectus. In particular, there is trend away from investments in mining and agricultural/rural development and urban projects, with a marked increase in investments on surveillance, prevention and control of emerging diseases, in particular vector borne.¹⁷ It should be noted that the Review Team was not able to process and compare the updated raw data provided at the end of the 2008 period.

¹⁶ Prospectus for Ecohealth PI 2005-2010, Expected Outputs, page 7 and Annex 3: Explanation of objectives, results, measures., page 25

¹⁷ Ecohealth Portfolio analysis. Annual PI Retreat, Ottawa, April 24, 2007

The Review Team notes that a number of stakeholders at global, regional and partner level raised concerns that this shift has resulted in a disinvestment in the areas in which the Ecohealth PI firmly established its earlier reputation and niche in ecohealth. The risk of abandoning good work and important partners, failing to ensure sustainability, and not taking projects to the next level was highlighted. This later concern (not sustaining results) is also raised in the Globescan Stakeholder Perception Survey¹⁸.

In the final days of the Review period several very good synthesis and reflections papers were produced by the PI Team. With limited time to take these fully into account the Review Team notes that these represent a good start at consolidating experience and reflecting on progress and encourages further such synthesis and analysis.

PI contribution to corporate goals

The overall performance of an organization relies in part on how well the various levels contribute to and strengthen each other – from project to program to corporate level and vice versa.¹⁹ The Review Team explored how well the Ecohealth PI contributes to and fulfills the expectations set out in the Corporate Strategy and Program Framework, and vice versa – how the corporate level interacts with the Program and PI level to support strategic management, good planning, monitoring and evaluation, risk management and other functions of managing a global Initiative and its portfolio of projects.

From the data collected by the Review Team in interviews and document reviews, it appears generally that the PI is contributing reasonably well to corporate goals on capacity building. It is less clear that specific progress that has been made across the PI on goal 2) the production, dissemination and application of research results that lead to changed practices, technologies, policies and laws – for the reasons discussed in previous sections of this report.

The Review Team understands that IDRC Senior Management intentionally does not require regular PI monitoring reports to track progress of results implementation of the Prospectus, preferring a more non-prescriptive and flexible approach to planning and monitoring however it was not clear to the Review Team how Senior Management can ensure that verifiable, credible research science, policy influence and capacity building is in fact taking place without more measurable monitoring information (and linking this more closely to more measurable outcomes for the PI and the CSPF). The Review Team notes that if this is not an expectation (i.e. if there is no demand for it) then there is little incentive for project and program officers to engage in monitoring and reflection processes that require time and effort in addition to ongoing workloads.

At the corporate level there are many useful studies and tools being produced for the Centre's use in planning, monitoring and evaluation and risk management²⁰, however these studies and tools could be more widely used by Program and Project Officers.

Coordination and learning across projects and programs

¹⁸ Stakeholder Perception Survey. Globescan. 2008. Q 17

¹⁹ Enhancing Organizational Performance, Charles Lusthaus, Marie-Hélène Adrien, Gary Anderson, and Fred Carden. IDRC.1999

²⁰ IDRC's Outcome Mapping and studies on policy influence, capacity building and networks.

The Review Team noted that given the considerable experience on the ground that an increased level of cross-project learning between and among regions would be appropriate to consolidate and extend the body of knowledge in Ecohealth. Enhanced South-South partnerships could also allow transfer of locally adapted or developed research methodology, and could add value to individual projects with comparable objectives. In regions where multiple donors are involved in funding, Ecohealth coordination of donors can also be improved, for example in LAC where CIDA is also supporting a number of disease prevention and control programs on similar EHPI priority problems like Chagas Disease. In this case better communication and coordination between CIDA and IDRC would benefit all parties involved.

Private sector engagement

The CSPF identified the private sector as an important new potential partner that is “central to the lives of the poor and has the power to make those lives better” and the Ecohealth Prospectus indicates that the private sector is critically important to the work of the PI, particularly with respect to mining, SMEs, agriculture. Despite the existence of an IDRC Task Force to drive Centre engagement with the private sector and efforts from the EHPI the Review Team found little evidence of progress in this area, and urges renewed efforts on the part of the PI and IDRC Senior Management at engaging the private sector, particularly at the level of industry sector leaders and industry associations. This would help to extend the reach of the individual PI successes to a broader level of influence.

The role of the Regional Offices

In the context of IDRC’s strong commitment to local ownership and decentralization of work the Review Team sought to understand role and responsibilities of Regional Offices for the ongoing management and performance (including design, monitoring and oversight of implementation) of the work of the Ecohealth PI. Proposed visits by the Review Team to Regional Offices were not fully supported as a priority for travel because of budgetary restrictions, yet in some cases it appeared to the Team that the Regional Offices played significant roles in responding to new emerging issues that has been central to the evolution of the PI.

The Review Team suggests that the Regional Offices can add particular value to the PI in supporting the continued devolution of the work of the EHPI to local partners and in fine tuning appropriate exit and scaling up strategies. Regional Ecohealth Advisory Committees of scientists and policy makers could be considered to assist with peer review, help to identify appropriate solutions for exit strategies, filling gaps in knowledge, and to provide feedback on the evolution of the work in relation to the specific context, challenges and opportunities of the region. For example in West and Central Africa, the Regional Office could play an important role in ensuring stronger technical support to projects in data management, statistical and economic analysis and scientific writing support through stronger South-South partnerships.

5.2.2 Research Capacity

In the broad area of assessing influence of the Ecohealth PI, the Review Team was required to assess to what extent the work of the PI has brought about changes in knowledge, attitudes, policies or practice in the behaviour, relationships, activities or actions of the people, groups and organizations with whom the PI and its projects are involved. This included consideration of changes at the individual, organizational and network level in research capacity, the contribution of the dissemination and communication strategies to change at these levels, the influence of

the PI on technology, and the extent to which the PI and COPs have contributed to influencing policy. The Review Team used the Centre's studies on capacity building, policy influence and networks²¹ to help refine questions and criteria in these areas.

Findings – Research Capacity

- The Ecohealth PI and IDRC in general are well respected for their role in building research capacity in developing countries.
- Overall the Review Team found that the Ecohealth PI is contributing positively in many cases to building research capacity particularly **at the individual level** in data collection and analysis, problem solving and critical thinking, model building and theory testing, and the application of research generated knowledge to practice. More is required to strengthen design, data analysis and scientific writing.
- Explicit strategies for building research capacity **at the institutional and network levels** are less clear. There are unresolved perspectives on what the strategy should be for targeted and linked investments at the individual, institutional and network levels, leading in some cases to concerns about the sustainability of investments at the individual level. .
- Influences of research on technology were noted, including the production, dissemination or adaptations of technologies in software developments, lab and clinical tests and ergonomic designs.
- Few explicit monitoring processes were found that measured change in research capacity or health outcomes but much anecdotal information exists.
- New partnerships with large players are likely to need more explicit and differentiated capacity building strategies and monitoring that focus on IDRC's contribution to capacity change at a broader level than the individual.

Overall the Review Team found throughout their interviews with all stakeholder groups that the Ecohealth PI and IDRC are well respected for contributing positively to research capacity in developing countries. In addition, the recent IDRC Stakeholder Perception Survey data for Ecohealth confirms this, finding that IDRC is “well recognized for its efforts to build capacity in developing countries to undertake research, and for helping developing countries to use science and technology to find practical solutions to the problem they face”²².

This is particularly true **at the individual level** where in some but not all cases the Review Team found good evidence of strengthened capacities in data collection and analysis, problem solving and critical thinking, model building and theory testing, and the application of research generated knowledge to practice. More support is required in some regions, notably West and Central Africa particularly for improvements in data analysis and scientific writing.

The Review Team understands and respects that there is a strong corporate history and commitment of supporting research capacity building at the individual level, however corporate outcomes and goals are increasingly identified in the CSPF and the Ecohealth PI **at the level of institutions, networks and society at large**, requiring differentiated strategies for targeting capacity building and change at these levels. The Review Team found that PI and project officers were not always clear on what level they were targeting or why, and what the specific

²¹ Making the Most of Research. IDRC 2005; Framework for Evaluation Capacity Development, IDRC 2005

²² IDRC Stakeholder Perception Survey, Globescan, 2008, Question 14 (a) and (b) results

strategies were in place at each level. In one case, IDRC had invested in an individual for a substantial duration of training in laboratory skills only to have her return to her institution where there was no functioning lab.

Clearer theories of change and more differentiated and linked strategies for capacity building to achieve desired outcomes are needed at these three levels, especially now with large corporate partnerships as an increasingly promoted delivery strategy.

Influence on technology

Projects visited in Latin America have some influence on technology, mainly through the production, dissemination or adaptations of technologies. Examples include software developments, lab and clinical tests and ergonomic designs²³. Yet the full spectrum and potential for such influence on technological issues could be expanded under proper guidance from IDRC.

Rather than having contributed to new technology development, the Review Team noted that Ecohealth PI's influence in West and Central Africa more *in the prevention of misuse of technology* (substitution of IPM for pesticides, more efficient alternatives to manual waste recycling). Scientists have positively contributed to changes of practices and introduced or adapted technologies such as household water containers in Yaoundé. The Ecohealth PI has also positively influenced infrastructure improvements and recycling technology in Benin.

5.2.3 Policy Influence

The Review used the results of the Centre's "Making the Most of Research: Research and the Policy Process"²⁴ to further define the outcomes that would be reasonable to expect in terms of policy change. Factors included in the Review were:

- How well the PI and its projects conceptualize policy change
- Whether the PI and projects can demonstrate that projects have led to expanding policy capacities, broadening policy horizons and affecting policy regimes;
- How well the PI has proactively planned for, managed and led work aimed at policy influence.
- The coherence of policy results
- Effectiveness of communicating research results to policy makers

In addition, the Review noted that policy influence was one of the three major corporate goals for IDRC in 2005-2008: The CSPF states that IDRC will "foster and support the production, dissemination and application of research results that lead to changed practices, technologies, policies and laws that promote sustainable and equitable development and poverty reduction".²⁵

The Centre's policy studies show that while the links between research and policy are complex, nuanced and seldom linear, the Centre needs to strive across its programming for a better understanding of the environment within which researchers and policy makers function, how research and analysis is situated in the broader arena of governance and change. It also must

²³ For example: On neurobehavioral tests. Handal AJ, Lozoff B., Breilh, J. Harlow, SD., Neurobehavioral development in children with potential pesticides exposure. *Epidemiology*. 2007; 18: 312-320

²⁴ Making the Most of Research: Research and the Policy Process. IDRC Evaluation Unit. 2006

²⁵ CSPF 2005-2008, page 3-3 para 67.

focus on outcomes and processes well past the end of the formal life of projects.²⁶ The Review Team confirms this in the following Policy Influence findings:

Findings – Policy Influence

- At a corporate level IDRC has done more than many development research institutions to study and define policy influence, however much more needs to be done to put this into practice throughout the work of the Ecohealth PI at global and field levels.
- While positive individual examples of policy influence were found in Ecohealth projects, there has been no systematic analysis of policy influence and lessons learned during the period of the Prospectus at project or program level. A recent note by the PI Team Leader reflecting on policy influence represents a good start at more systematic analysis and reflection.
- Definitions by project officers and project research teams of what constitutes ‘policy’ spanned a wide range (perhaps too wide) including no clear idea, to all actors taking decisions, adaptations of legal frameworks in the light of new research findings, social action by state institutions, actions by authorities at all levels, national policy and legal frameworks and international conventions. More could be done to clarify the understanding, focus and definition of what policy is in the context of various research settings.
- There is no consensus among the IDRC Ecohealth Program Officers interviewed on whether policy influence is or should be an expectation at program and project level and therefore purposefully supported from the early scoping and design stages through to implementation and monitoring and reporting.
- There is not sufficient program level strategy and capacity support in place to systematically plan for, manage and monitor policy outcomes at a scale as envisioned in the Prospectus and in the CSPF.
- Many project interviewees were unfamiliar with policy influence mapping and monitoring tools although most were aware of the importance of engaging policy actors at an early stage and throughout the life of Ecohealth projects.
- The involvement of policy actors in projects visited is highly variable. Some projects visited were well planned and implemented with the full range of policy and development actors, others appeared to have been planned and implemented by researchers with minimal involvement of policy actors,
- The majority of respondents in the IDRC Stakeholder Perception Survey data for Ecohealth view Ecohealth staff as better at communicating with science professionals and researchers than with policy makers, development professionals and the public.

Discussion

The Review Team appreciates the last minute efforts of the PI to provide the Review with a reflection paper on how the Ecohealth PI influences policy however wishes to note that it has not been possible to fully take its contents into account in the Review report. Further analysis of this kind is however fully supported and encouraged by the Review Team.

²⁶ Paraphrased from text page 5-2, 5-3 IDRC Program Framework 2005-2010.

The Review Team found some excellent individual examples of policy influence however the overall approach of the PI and Project Officers to planning purposefully for policy influence and systematically managing to engage key policy stakeholders in Ecohealth work appears to be less than what is needed to achieve policy impact at a broader scale in order to achieve corporate objectives.

Very few interviewees at field level were able to provide specific examples of explicit strategies and targeted policy results even though most recognized the importance of influencing policy. At Program level there did not seem to be a consensus on whether policy influence is a requirement of work, and flowing from this, little purposeful and systematic planning for and monitoring of policy influence.

In Latin America, although most of the interviewees indicated that the projects they are involved with intend to produce changes in knowledge, attitudes, motivation and in practices at different levels and population groups, few could actually show any ongoing systematic monitoring of the extent and durability of policy influence with the exceptions of Ecuador and Mexico where strong evidence is available to show that Ecohealth projects are influencing policy. **In West and Central Africa**, stakeholders define policy as essentially all actors taking decisions and this is difficult to disentangle from the general concept of civil society. The general strategy for influencing policy influence is bottom up from communities to ministers and while IDRC PI Officers try to avoid prescriptive policy changes this is perceived by stakeholders and partners as not being very effective. Interviewees expressed considerable frustration with political authorities and generally seem not to have found effective ways to engage them on an ongoing basis, even though they realize they are critical players in achieving policy impact.

The most successful influence on policy was documented at the levels of universities. Academic leaders (rectors of universities, professors) have incorporated Ecohealth concepts into training and teaching curricula.

5.2.4 Influence - Communities of Practice (COPs)

The Review used the Centre's studies on Networks²⁷ to understand the background of the Centre's support to networks as a modality for achieving objectives, and the expected outcomes of COPs²⁸ to further define the outcomes that would be reasonable to expect in terms of Communities of Practice in Ecohealth.

Findings

- The modality and objectives of the COPEHs are highly relevant and appropriate to the programmatic objectives of the PI and the corporate objectives of IDRC.
- All project and program stakeholders and some partners viewed COPs as an important and critical element in extending and scaling up Ecohealth projects and activities.
- In some case the COPs are partially achieving the overall objectives of COPEHs, particularly in relation to networking and exchange of information among the research

²⁷ The Sustainability of Networks: Terri Willard and Heather Creech. IDRC 2006; The Governance and Coordination of Networks. Maria Fernanda Tuozzo and Diana Russe. 2006; Capacity Building in Networks. Rhiannon Pybrun and Irene Gujit. 2006; The Intended Results of IDRC's Support of Networks. Abra Adamo. 2005. The Sustainability of Networks. Tricia Wind. 2005.

²⁸ Communities of Practice in Ecohealth. http://www.idrc.ca/en/ev-101449-201-1-DO_TOPIC.html

community, but most have not yet realized their potential in relation to influencing policy and to supporting scientific excellence.

- The composition of most COPS is too narrowly focused on research representatives with not enough engagement of policy and development actors to reflect the fundamental.
- Despite laudable efforts to do so, in most cases the engagement and ongoing participation of policy actors in COPS remains a challenge. Engagement of development actors has been more successful in some regions.
- More purposeful management of COPs is required from the design stage through implementation to ensure full engagement of relevant research, policy and development stakeholders, and to support the equal delivery of the three major objectives of COPEHs.

The Review Team recognizes IDRC's long and respected commitment in supporting networks in development research. Networks in the form of Communities of Practice in Ecohealth (COPEH) have been an important part of the Ecohealth PI program and strategy since its inception. The COPEHs explicit objectives are to build excellence in ecohealth research, facilitate communications and networking within the regions on ecohealth research, and to link ecohealth research to policy and practice²⁹.

The Review found strong support among all project and program stakeholders for COPs as a means to bring together Ecohealth stakeholders, to capture learning and extend the work and influence of ecohealth. The Review notes also that in the Globescan Stakeholder Perception Survey support for networks (facilitating, expanding and strengthening), sharing lessons learned, and capacity building were among the top things that stakeholders would like from the Ecohealth) program³⁰.

Overall the Review Team found that COPs were viewed by stakeholders as a highly meaningful and useful means of achieving the objectives of the EH PI and the corporate objectives of IDRC, however practice varied considerably across regions. **In Africa** there are improved network capacities within the COPEH, but most partners are reported to be so heavily involved in other activities that communication is slow and not very effective. The support for NEPAD (The New Partnership for Africa's Development) has had very few results in terms of broader influence, and while COPEHs interact with supra-national bodies like NEPAD, their influence on national policy appears to be limited.

Growing from 13 members from 6 countries in 2004 to over 120 members from 25 countries in 2007 the **Latin American** Community of Practice in Ecosystem Health to reduce toxic exposures in Latin America and the Caribbean (COPEH – LAC) is successfully expanding as a knowledge network guided by a group of very enthusiastic and dedicated individuals. Although the main purpose of the COPEH – LAC is to promote, validate and disseminate new ways of looking and solving health and environment problems based on a multi-stakeholder partnership, the initial phase has been essentially academic. Many interviewees believe that the time has come to expand its membership to non-academic partners including policy and decision makers, as well as community leaders, aiming at achieving larger scale objectives including policy influence.

²⁹ Communities of Practice in Ecohealth. http://www.idrc.ca/en/ev-101449-201-1-DO_TOPIC.html

³⁰ IDRC Stakeholder Perception Survey, Globescan, 2008, Question 12 results.0

The experience of trying to develop and expand a broadly based Community of Practice for Ecohealth in the **Middle East, North Africa region (MENA)** has provided the Ecohealth PI with valuable lessons in designing and managing COPEHs. Long before the Review Team was commissioned, PI Program Officers had reported that the MENA COPEH was not effective in its current form and should be either refocused or disbanded. Key performance issues included too narrow and small a membership, the lack of adequate stakeholder analysis and policy mapping to purposefully inform the recruitment of members for and agenda of the COP and lack of a clearly defined influencing strategy for the COP. The COP remained essentially a discussion group for Ecohealth research project officers with little engagement of other major stakeholders until the intervention of the IDRC Regional Office. The Review recognizes and supports the current efforts to refocus the COPEH MENA, expand the membership and engagement of policy stakeholders and strongly supports the efforts being made to do so by the PI and the Regional Office.

In South East Asia the lessons learned on the implementation of APAIR indicate that a multi-institutional and multi-country research network takes time. In this context, it is not easy to harmonize methodologies and synchronize implementation. APAIR is still a young network, and as expressed by the Regional Office in Singapore “IDRC will be sticking to APAIR for a considerable time”. Yet, in Thailand, APAIR is recognized as a valid and a productive research network. The researchers, policy makers, community representatives and other stakeholders are actively participating in the network and committed with the final outcomes of the research projects. The APAIR projects are clearly included in the research logical framework on Avian Influenza produced by the Ministry of Health and IDRC is highly regarded for the technical and financial role that the agency has played over time.

5.2.5 Influence on Academic Discourse

Findings

- Influence on academic discourse is visible in West and Central Africa and in Latin America.
- Scaling up of academic influence depends upon improving the quality and quantity of Ecohealth research outputs and the visibility of the Ecohealth PI in international journals.

The Review Team noted the following influences on academic discourse and institutions. While not exhaustive, the Review Team found these outcomes positive and encouraging:

In Latin America, reviewers report that many projects appear to be influencing the structure of academic learning and discourse within and outside the institutions where the projects are primarily hosted. Formal master degrees on Ecohealth are already offered in Ecuador and it is likely that a PhD on Ecohealth will soon be available in Ecuador under a consortium among the University de los Andes Simon Bolivar in Quito, the University of British Columbia in Canada, FIOCRUZ in Brazil and the Andes Health Organization.

In Africa, reviewers report impressive efforts to introduce Ecohealth courses at the University of Benin with specific study options on environmental management and water quality (DESS-MEQUE) and environmental management and nutrition (GENA). Ecohealth courses in Cotonou are incorporated into university (medical) curricula where they are felt to have a strong institutional impact by interviewees. The International Livestock Research Institute (ILRI member of CGIAR) has taken up Ecohealth conceptual approaches and developed a new project with IDRC.

Study grants have also been allocated on a competitive basis and interviewees were hopeful of the positive effects on the next generation of young professionals in Ecohealth. Interviewees noted that the short duration of Eco-health grants (up to one year) are not long enough to support a PhD project. The accreditation of Ecohealth courses in Africa at the level of CAMES (African academic accreditation board) is likely to be seriously constrained or not possible at all, without sound scientific evidence published in internationally refereed journals. As noted elsewhere, this requires urgent attention.

Elsewhere IDRC has interacted with similar programs such as the One Medicine Program of the Consortium for Conservation Medicine and (in the past) with the Fogarty International Center of the National Institute of Health (NIH). However the impact of these interactions is reduced by lack of visibility in the international scientific community and the failure to update the core concepts of Ecohealth. As a result, impetus in public health has shifted to a concept of ecology of infectious disease (largely in terms of vector biology) more than the broader notion of ecohealth.³¹

5.3 Quality of Scientific Research Outputs

Annex 7 provides an outline of the criteria and approach of the Team in reviewing scientific research outputs of the PI.

Findings

- While some good examples were found of scientific quality, the overall quality of scientific outputs is mixed and uneven across the Ecohealth PI.
- Projects of longer duration generally appear to have higher quality and quantity of outputs pointing to the need to carefully assess the time and support that is required to achieve high quality outputs.
- There does not appear to be a common or homogenous approach to defining research in the Centre and this presents difficulties for defining quality measures appropriate to the type of research conducted.
- There are differing views among Ecohealth Program Officers on the nature and importance of peer review and whether development outcomes are equally as important as scientific results.
- While some peer review takes place, no systematic approach or standards to peer review appear to be in place as expected in the Ecohealth Prospectus.
- By contrast there are clear corporate messages on the importance of scientific excellence in IDRC's work.

Discussion

Fundamental to the reputation and credibility of IDRC as a research institution is the **scientific quality and rigor** of its research results. The Corporate Strategy and Program Framework 2005-2010 states clearly that scientific excellence is a mainstay of the Centre's support for research and that this criterion will remain a priority in the methodology and quality of research proposals, and that peer reviewed publications will increase as the Centre moves towards 'more

³¹ See Ecology of Infectious Disease program at NIH and NSF, USA.

complete' projects. These criteria will figure prominently in external reviews of projects and programs that the Centre uses for decision making, accountability and learning purposes.³²

The Ecohealth Prospectus echoes this commitment to scientific excellence in stating that the Ecohealth PI will increase peer review of supported research in order to refine, scale up, raise the visibility and profile of the PI and contribute to scientific excellence of the work. The Prospectus saw external peer review as a means of devolution of intellectual leadership and mainstreaming, and in managing risks related to increased advocacy roles of project partners.³³ With this in mind, the Review Team was diligent in requesting and reviewing all research outputs of the projects visited. Annex 7 sets out the full results of the Review of Scientific Quality of Research Outputs.

Research products were not always easy to locate, nor was there a central data base of research products to provide an overview of available research products. Of the research products obtained and reviewed, the Review Team found mixed and highly variable performance in the scientific quality and quantity of outputs and highlights this as area of concern³⁴.

In West and Central Africa the scientific outputs of most of the research projects visited were not clearly evident. Research results were found almost exclusively in reports, theses or conference proceedings. With the exception of Forget and Lebel (2001) the Review Team did not find a publication from this region in international peer reviewed journals. Searches in public medline (<http://www.ncbi.nlm.nih.gov/pubmed/>) for the names of the physicians involved in West and Central Africa projects did not result in any results relevant to the reviewed projects. There are however a series of annual reports, MSc and PhD documents available and international conferences seem to be attended on a regular basis. The Review Team is aware that other projects in the region have a commendable record of scientific publication. By contrast, projects in Latin America have a strong record of publication in internationally recognized journals as well as participation by project leaders in international and national meetings.

Factors affecting the quality of research included the inadequacy of initial study design, problems in study implementation (for example, failure to collect a sufficient number of independent observations or enroll enough subjects, and lack of rigor in measurement instruments). It appears that while research designs in most cases are related to stated project objectives, the implementation of these projects is over simplified and the analysis of the data lags much behind what could be analyzed using existing data, and what could be obtained by more comprehensive data collected that could support more in-depth statistical analyses. There is a large untapped potential of relatively good quality data in West and Central Africa which is not sufficiently analyzed, and not written up or published.

The picture in projects visited **in Latin America** appeared quite different with regard to the quality and quantity of research outputs. Because of factors related to the solid growth of ecohealth concepts and investments in ecohealth in Latin America prior to IDRC investment, the community of partners has been able to publish peer reviewed papers at a reasonable rate. There are also marked differences in the scientific quality of projects outputs within Latin America. More robust outputs and number of peer reviewed publications were associated with phase II projects, suggesting that the time frame of the projects is relevant in terms of the quality

³² CSPF 2005-2010, section 5-3 para 10. Scientific excellence.

³³ Prospectus for Ecohealth PI 2005-2010, page 7, Expected Outputs and page 19.

³⁴ E.g. None of projects visited in West and Central Africa had publication lists available.

of the expected products. In general, quality is improving in particular with respect to sampling methods and statistical data analysis but there is still room for greater rigor, in particular in the incorporation of true transdisciplinarity.

Two major issues / questions emerged for the Review Team in the course of the interviews and in reviewing the quality of research outputs:

1. Is there (should there be) a consensus and clarity on what scientific quality means in relation to the Ecohealth PI and IDRC's Mission; how important is it, and how should it be measured?
2. How important is peer review and peer review publishing in achieving the desired outcomes of Ecohealth and of IDRC?

Despite the strong corporate message that scientific excellence is a mainstay of the Centre's support for research, and the commitment of the Ecohealth Prospectus to increase peer reviewed publications, the Review Team did not find a consistent understanding of and commitment to a peer review process across the PI or a major body of peer reviewed work published in major journals in the Ecohealth community³⁵. Peer review is understood by some Program Officers to mean in-house review while the Review Team members consider it to be external to the Program, often as part of editorial teams of international journals.

Differing views were expressed by Program Officers on the importance of peer review and whether development outcomes were equally as important as scientific results. Some Program Officers acknowledge that the failure to publish impairs the overall impact of Ecohealth and many stakeholders recognized the need for support in data analysis and scientific writing. Senior Management interviews and the CSPF confirm the importance of scientific excellence and the corporate expectation that this is a performance criteria and major deliverable of Programs.

5.4 Impact and Sustainability

Findings

- While improved health status and environmental conditions are documented in a limited number of cases visited, it is not possible to assess the sustainability of outcomes and impacts at a program level because of the lack of systematic monitoring data and analysis of influence or impact at the project level.
- Considerable anecdotal evidence of impact was provided but with little or no systematic monitoring data to verify the claims.
- The corporate imperative to move to larger partnerships where the need to determine progress and the contribution of IDRC is or will be even greater makes the importance of good monitoring systems even more important. The risk of abandoning good work that has the potential to achieve real impacts was also highlighted by stakeholders.

³⁵ Some were found, but for the age of the PI more would be expected in Journals such as, but not limited to: Acta Tropica, Tropical Medicine and International Health, Bulletin of the World Health Organization, Health Social Sciences, Proceedings of the Royal Society of Tropical Medicine and Hygiene, Revue de Médecine Tropicale (Marceille), PLoS Neglected Tropical Diseases, Environmental Health Perspectives, Ecohealth. Journal of International Development, World Development, Social Science and Medicine, International Journal of Environmental Health Research, etc.

- ➔ The challenges of achieving policy influence remain a major constraint to scaling up solutions through legal and political systems, and to the long term impact and sustainability of current efforts that rely heavily on the dedication of individual leaders and champions.
- ➔ A lack of awareness among agencies of the benefits, opportunities and funding modalities in the field of ecohealth is an obstacle to sustaining and diversifying the support for ecohealth in some regions.
- ➔ Explicit exit strategies were not found in many projects visited by the Review Team.

While it was clear to the Review Team that much good work was being done by the Ecohealth PI, the Review Team found it difficult to assess the sustainability of outcomes and impacts because of the lack of systematic monitoring data and analysis of influence or impact, either at the project level or the program level. Some project specific influence and impact data were found, and much anecdotal evidence was provided but with little or no systematic monitoring data to verify the claims. While many of the anecdotes are likely well founded, the Review Team suggests that this is not enough to provide credible evidence of the influence, effects and impacts of the investments in Ecohealth over the period of this Prospectus. Nor is it enough to provide evidence of progress towards major corporate goals.

Explicit **exit strategies** were not found in many projects and this should be more explicitly addressed in the next generation of projects and in the theory of change for the PI, particularly during a period of realigning investments.

5.5 Risk Management

The Review was required in its TORs to assess the extent that risks have been identified and mitigated and effectively managed in the PI. Review Team members asked questions of project and program officers concerning the processes and tools that managers use to identify, mitigate and manage risk and provide general oversight of project and program performance. The Review Team used the IDRC Corporate Risk Profile and related risk studies³⁶ from the IDRC Risk Management and Internal Audit Unit (RMIA). Risks are identified in three areas – operational risks, external risks and research risks. In addition, the PI Team Leader provided the EHPI assessment of risks that was prepared in response to the corporate risk profiling exercise.

Findings – Risk Management

- ➔ While field managers were able to provide examples of *ad hoc* responses to risk they were much less aware of the Centre's explicit expectations of them in terms of planning for, monitoring and managing risk.
- ➔ Managers are expected to contribute systematically to risk assessment at the project approval stage (PAD), however the expectations for oversight and monitoring of risk throughout the implementation of the project are not as clear in terms of frequency of oversight responsibilities and clarity of what constitutes risk during implementation.
- ➔ The risks identified by the PI and the Review Team align roughly with that of the corporate risk profile (research risks – quality, policy uptake and methodology).

³⁶ IDRC Risk Identification and Risk Management Study. IDRC Risk Management Internal Audit (RMIA) 2007

- ➔ The Review team encountered several projects where partnerships risks to reputation and occupational safety risks respectively were obvious upon visit to the site, but had not been addressed or mitigated³⁷
- ➔ The Review Team concurs with the categories of risk identified by the PI Team Leader³⁸ but suggests a slightly higher risk in achieving objectives due to the challenges of catching up and fulfilling the objectives of the Prospectus in light of the different challenges and risks posed by new larger partnerships.

Discussion

The Review Team found the RMIA risk management framework useful in assessing the extent to which program and project officers assess and manage risk. In addition the Ecohealth Team have produced a paper mapping their assessment of Ecohealth PI risks against the corporate risk profile and this too is a good start at reflecting more systematically on risks management. However as the interview results from field visits revealed much more needs to be done to integrate this work into the management practices of Ecohealth project and program officers on an ongoing basis.

In Africa there appears to be very limited awareness and incorporation of formal risk management practices at the level of project officers. Risks were identified as they arose and appeared to be handled on an ad hoc basis using good managerial skills, “common sense”, seeking additional funds and adapting research plans to unexpected outcomes. There is a similar informal risk management strategy on the part of PI Program Officers in that they attempt to follow up all projects in a responsible and regular manner. Solutions are discussed in close interaction between headquarters, regional offices and project research teams.

In Latin America and Asia, many interviewees were not aware of formal risk management processes although most indicate they are managing risk informally. In the case of one of the projects in Mexico, some extra health and accident insurance for the researchers involved in the project was added. Most felt it would be useful to have some seminars on risk. In the Mongolia project visited there was no evidence of awareness of risk management, even though the project had obvious risks in its implementation. Risks specific to policy influence are not routinely emphasized by PI managers or by project partners.

Some of the risks to the EHPI identified by interviewees included: political risks (appropriation by government), risk of paternalism in project management; lack of cohesion of communities and scientists; dependence on individuals who take strong leadership; risks of being swallowed up by big partners; risks of imposing policy solutions from outside.

6. Conclusions and Recommendations

The Review Team found that the Ecohealth Program Initiative has enriched IDRC through the development of the ecohealth concept and its emphasis on the holism of environment and health, the importance of community based participatory research, the need to respond to locally identified problems, the commitment to influence on policy and behavior, and attention to gender and social aspects.

³⁷ Details have been transmitted to the PI separately.

³⁸ EHPI Risks mapped to Corporate Risk Framework. EHPI Team Leader, 2008.

The strength of the Ecohealth Program Initiative and the resilience of this concept is reflected in the growth of ecohealth as an academic discipline, the existence of an academic journal in the field, successful international meetings, the formation of networks of Ecohealth practice, and the adoption of the Ecohealth perspective by other agencies and funders. The expertise and commitment of the Ecohealth Program Initiative Team to the concept, projects and stakeholders has undoubtedly played an invaluable role in the successes and growth of the program.

The Review Team concludes overall that the Ecohealth Program Initiative continues to be a well founded and important program for IDRC and for the ecohealth and development community at large and deserving of continued support.

While generally moving in the right direction, the pace of progress appears to be slower than envisaged in the Prospectus and the challenges of consolidation and responding to large new partnerships require strengthened systems, skills and capacities that are either weak or currently not in place. Renewed and focused efforts are needed to further the evolution of the Ecohealth concept, ensure scientific quality of research, consolidate its successes and learning, scale up its scope of work from specific projects to sustainable and extended impact, and to achieve greater policy influence.

That the PI Team and the Program Director of ERNM are well aware of the importance of these issues gives the Review Team confidence that with adequate focus and support these challenges can be tackled successfully.

The Review identifies the following issues as key to address if the PI is to advance successfully to its next level of achievement and to fully respond to IDRC's corporate objectives:

5. Lack of clear theories of change and measurable outcomes in the design of projects, especially related to achieving core objectives of health promotion, capacity building, and policy influence
6. Insufficient engagement of policy actors (and in some cases the full range of multidisciplinary actors) in the design and implementation of work;
7. Uneven scientific quality of outputs and lack of a systematic peer review strategy
8. Inadequate strategies for effectively capturing, analyzing, communicating and disseminating research and policy results.

Going forward into a new cycle of programming at the PI and Senior Management level the Review makes the following overall recommendations and suggestions to strengthen the Ecohealth Program Initiative and take it to its next level of success, and to enhance IDRC's reputation in this important area of work.

Recommendations

1. Support the further development of the Ecohealth concept as discipline and practice

- Update the concept to integrate more recent frameworks. Further consideration should be given to approaches such as WHO's DPSEE model (driving forces, pressures, state, exposure, effects), and current concepts included such as environmental economics (environmental goods and services), Burden of Disease analyses, health and development dynamic analyses of Sen and Sachs, the definition of development as an expansion of rights and freedoms, dynamic systems modeling, vulnerability/resilience and adaptive management approaches, and ensuring a role for the private sector in problem definition and policy influence.

- Ensure a deeper and common understanding of the concept and its application across regions and stakeholder groups. Support orientation workshops with donors and important new constituents, and in-depth training with project staff, partners and other IDRC program staff to ensure the elements of the ecohealth concept are well understood and that operational challenges are addressed in the early stage of implementation.
- Support analytic studies of Ecohealth theory and its developments at a programmatic level and with consortia of partners, and encourage assessment of the Ecohealth framework by all stakeholders - program, project leaders, policy and development practitioners.
- Support scaling up of academic Ecohealth achievements by strengthening scientific standards for Ecohealth practice and improved visibility in the well respected health literature.

2. Clarify the niche and role of IDRC in Ecohealth and ensure visibility

- Reassess and reconfirm the rationale for the shift in the Ecohealth portfolio in light of corporate objectives, the needs of Ecohealth stakeholders and the capacities of the EHPI.
- If infectious disease is confirmed to play a major role in the PI strategy and portfolio for the future (as it appears it will), increase the PI technical and institutional capacities in this area.
- Consolidate the experiences on mining and agriculture before shifting priorities or phasing out these areas.
- Publish and disseminate analyses on an evolved concept of Ecohealth in order to retain IDRC's niche and the influence of the Ecohealth Program.
- Protect IDRC's reputation in all Ecohealth work by ensuring the acknowledgement and criticality of IDRC's role and value, particularly in large scale projects with multiple players already in the field.

3. Strengthen the quality of research results and the evidence base of Ecohealth

- Clarify the nature and focus of IDRC's research in ecohealth (whether basic, applied, translational) and the quality measures and outcomes that are expected. Ensure that staff and partners are fully aware of these expected outcomes prior to approval of projects.
- Support capacity building for improved research design, data analysis and publishing in international peer reviewed journals of results through north-south and south-south partnerships, for example, engaging the highly successful Latin American Ecohealth institutions and organizations in mentoring newer participants in Ecohealth projects across regions and continents.
- Sample projects on a longitudinal basis [even after completion] to follow up on extent of and lifespan of influence of research results.
- Further develop the experiential database at the program level on lessons learned, techniques of value, and methods for policy influence, capacity building, partnerships and communities of practice.

4. Support program capacities to manage the consolidation and shifts of the Ecohealth PI

- Strengthen programmatic skills, capacities and systems required to manage a large complex portfolio, in particular portfolio analysis, relationship and partnership (alliance) management, risk management, and monitoring and evaluation.
- Invest in knowledge management in order to systematically track progress and learning in project and program results, achievements, outcomes and to generate regular monitoring, learning and policy briefs for program and corporate management.
- Generate program level synthesis of projects results, cross-program learning, and global analysis products on Ecohealth.
- Evaluate stand alone projects for potential for transferable learning
- Ensure the relevance to and use of IDRC risk management approaches with Program Officers and project research teams and partners.

5. Develop a more integrated strategy for achieving and scaling up capacity building at the individual, institutional and network levels

- Consider a 'twin track' approach to investments in individual researchers linked to institutional support investments either through the Centre alone or with strategic partners.
- Continue to support Communities of Practice with a more purposeful management approach focused on policy influence, while ensuring the composition of COPS include from the beginning the full range of stakeholders: researchers, policy makers, development practitioners, civil society.
- Build capacity in stakeholder mapping and policy influence strategies among COP members and managers.

6. More purposefully support policy influence as a key management skill and expectation of work

- Clarify corporate and programmatic expectations of policy influence as a key requirement and outcome of project and programmatic investments.
- Clarify the corporate strategy (including skills, capacities and resources) to achieve the level of policy influence required in the CSPF.
- Provide support to PI program and project officers in developing stronger skills and capacities to achieve policy influence, such as policy mapping, developing purposeful policy outcomes and managing, monitoring towards those outcomes.
- Ensure that policy actors are consistently involved in the definition of projects and in Communities of Practice (COPEHs) from design throughout implementation both at a programmatic level as well as project level.
- Consider new (or increased) partnerships with specialized policy institutions at global and regional levels to provide policy backstopping in projects and in influencing development agendas and policy framework.

Annexes

Because of the restrictive page limit to the final report, much of the detail of context, regional findings and discussion points are presented in the following Annexes. The Review Team regrets that it was not possible to present this information in a more integrative manner.

- Annex 1: Terms of Reference for the Review
- Annex 2: Evaluation Matrix
- Annex 3: Context for the Review – Institutional, Corporate, Programmatic, Conceptual
- Annex 4: Projects visited
- Annex 5: Interviews conducted
- Annex 6: Regional findings and discussion points
- Annex 7: Results of Review of Scientific Quality of Research Outputs
- Annex 8: References - documents consulted

Annexes to the
Final Review Report
External Review of the IDRC Ecohealth
Program Initiative

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External Review Team

November 2008

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Annexes

This report contains the Annexes to the Summary Report of the External Review of the IDRC Ecohealth Program Initiative.

Annex 1: Terms of Reference for the Review

Objectives of the Review (from the Scope of Work document)

- a. Assess the extent to which the program is meeting its objectives and aims, assess how risks to the achievement of the program objectives were identified and managed, as set out in its prospectus / strategy, and identify any evolution in objectives.**
 - i) Describe and assess the progress of the program towards reaching its objectives;
 - ii) Identify any evolution in program objectives and/or in interpretation of program objectives, and any adaptations that the program is making to changing contexts, opportunities and constraints;
 - iii) Assess the appropriateness of the risk identification process and the effectiveness of the risk mitigation strategies put in place to support the achievement of program objectives.

- b. Document the results of the program (i.e., outputs, reach, outcomes, and main research findings) and analyse their influence.**
 - i) Review the program's outputs¹ to date, and comment on their quality² as perceived by the appropriate sectoral/regional experts, intended audiences, users and/or stakeholders.
 - ii) Describe and analyze the influence of the program through its outcomes and the sustainability of those outcomes; the program's reach³; the strategies which contributed to the outcomes; and any constraining or facilitating factors or risks (internal/external to the program, internal/external to IDRC). This should take into account, but need not be limited to, the following:
 - the effectiveness of the program at promoting the dissemination, communication, and utilization of research findings;
 - the contributions of the program to building or strengthening capacities of researchers, organizations, research users, and institutions;
 - the contributions of the program to influencing policies⁴;

¹ Outputs include, but are not limited to, research reports and publications, websites and electronic lists produced, conferences, workshops and their proceedings, etc.

² Quality is to be based on consideration of their scientific merit as assessed in relation to the relevant disciplines/fields, their relevance and appropriateness given the intended audience(s) and user(s), and context(s), and the purposes and objectives of the program.

³ Reach is defined as how actors interacted with and were affected by their engagement with the activities and/or results of the program.

⁴ Influencing policy: Policy influence is broad and a strategic evaluation at IDRC found that it includes building the capacities of both researchers and decision-makers in using knowledge to make policy, and broadening the conceptual boundaries of the whole research-to-policy process.

* *Expanding policy capacities.* Research can support the development of innovative ideas and the skills to communicate them, and develop new talent for doing issues-based research and analysis.

* *Broadening policy horizons.* Research can introduce new ideas to the agenda, ensure that knowledge is provided to decision-makers in a form they can use, and nourish dialogues among researchers and decision-makers.

- the influence on technology development, adoption or adaptation;
 - any changes in relationships, actions or behaviours of project partners and other project stakeholders (individual, organizations, groups, etc.), including any relationships that the program effected which contributed to development results (e.g., formation of networks, involvement of stakeholders, collaboration among researchers, etc.),
 - changes in state (e.g., improved health status of a group of people, environmental conditions)
 - any contributions of the program to a greater understanding and consideration of inclusion of gendered perspectives in research and research processes (amongst program partners and within the field of research); and,
 - any other outcomes.
- iii) Describe and analyse the program's main findings on the research questions and themes as outlined in the program's prospectus / strategy.
- Identify what conclusions can be drawn from projects' research findings and any contracted research, working papers, and/or synthesis work conducted by the program and/or its partners;
 - Assess the overall quality of the research findings, and their contribution to international, policy, and academic debates, discourse, and/or understanding of the topic(s) under study;
 - Comment on whether, and in what ways, the program occupies a niche in the field(s) in which it operates; and,
 - If appropriate, identify any particularly innovative methodologies or research findings.

The evaluation should provide key recommendations of the support of research for development and issues for the Centre to consider for this program.

* *Affecting policy regimes.* Research findings can modify the development of laws, regulations, programs, or structures.

Annex 2: Evaluation Matrix

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
Relevance <i>(including rationale, niche, value added)</i>	To what extent does the EHPI occupy a niche in the field of Ecohealth and in key related fields of International Health, Tropical Medicine, Environmental Health, Occupational Medicine, Environmental Sciences.	Concept / rationale To what extent is 1) the concept of and 2) rationale for the Ecohealth PI clearly set out in: 1) the corporate objectives of IDRC; 2) the strategic objectives / workplan of the PI; 3) the project documents 4) COP programme documents	Clear statements of concept and rationale found in corporate, programme, project and network documents	Review of : IDRC corporate objectives and strategy PI Prospectus EH Green book Programme, project, network documents - workplans and other documents
		Role / niche What specific role does IDRC play / what niche does IDRC occupy in the broader field of Ecohealth in relation to other players.	Definition of the size and scope, boundaries of the broader field that the EHPI is aiming to influence. – role, size, major players, levels of investment,, the specific role of IDRC.	Scanning analysis / institutional mapping of players and investments in the broader field of EH and other related fields. Interviews with partners
		Comparative advantage To what extent does IDRC have a comparative advantage in the Ecohealth field and key related fields?	Ratings of stakeholders from interviews Scanning analysis	Scanning analysis / institutional mapping of players and investments in the broader field of Ecohealth.. Interviews with partners
		Clarity of understanding by stakeholders To what extent do partners and key stakeholders understand the concept and rationale for the EH as communicated by IDRC? (Is it clear to them what it is?)	Ratings of stakeholders from interview data – corporate level, PI, project, partners, networks (COPs)	Interviews with partners, key stakeholders - corporate level, PI, project, partners, COPs
		Relevance to stakeholders	Ratings of stakeholders – interview data – corporate level,	Interviews with partners and key stakeholders - corporate level, PI,

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		To what extent is the EH concept relevant to the work of stakeholders?	PI, project, partners, networks (COPs)	project, partners, COPs
		Value added To what extent does the EH concept add value to: 1) the specific work of stakeholders; 2) research for development; In what ways?	Ratings of stakeholders – interview data – corporate level, PI, project, partners, networks (COPs)	Interviews with partners, key stakeholders - corporate level, PI, project, partners, COPs
		Perception of risk related to niche / concept To what extent are there risks to IDRC's reputation related to the EH niche, concept? If any, describe the risks.	Ratings of stakeholders – interview data – corporate level, PI, project, partners, networks (COPs)	Interviews with partners, key stakeholders - corporate level, PI, project, partners, COPs
Effectiveness - achieving objectives	To what extent is the PI meeting its objectives?	Programme logic / theory of change (the why) Is there a clear programme logic / theory of change / results chain for the work of the PI at: <ul style="list-style-type: none"> strategic level (programme – corporate level) at project field level at network level (COPs) 	Clear theory of change or programme logic – including objectives, results chain, linked outputs, outcomes to influence / impact at different levels Assumptions in the results chain identified	Review of corporate objectives / strategy documents EHPI Prospectus Workplan Interviews with PI and corporate managers
		Situation analysis Is the programme logic supported by a context analysis / situation analysis of the broader context of the PI?	Data based context analysis – trends, issues, drivers, using respected global and regional analysis. Gender differentiated analysis.	Known global analysis documents

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		Were key stakeholders involved in defining the problem and developing the situation analysis?	Documentation of stakeholder participation in problem scoping, definition.	Programme and project documentation Interviews with PI and project officers and users.
		Clear results – outputs (the what) Is there a clear set of research results (outputs) to be delivered in a given timeframe (annually, and 3 yrs – or whatever timeframe the PI plans for) Are there gender differentiated results where appropriate	Evidence of clear, complete and up to date results (outputs) in workplans, with timeframe Gender differentiated results (where appropriate) Evidence of adjusting results on a regular basis based on monitoring data, learning events, feedback, evaluations, etc.	Workplan review Monitoring plan Progress reports on results
		Are the results (outputs) perceived to be of sufficient quantity, realistic, achievable within the time and resources available?	Results sufficiently aligned with objectives (quantity), budgets / resource allocation and capacity (realistic), timeframe (achievable). Identification of alignment and any gaps Results of interviews with project teams, programme managers, COP managers.	Analysis of workplans and budgets and capacity in relation to objectives. Interviews with project programme and COP managers.
		Clear and coherent strategy (the how) Is there a clear strategy that operationalizes the work of the PI? (Can you tell how work is to be done?)	Presence of a clear and coherent strategy ⁵ setting out how results are to be produced / delivered and objectives achieved.	Corporate objectives / strategy for EH and other related PIs. EHPI prospectus PI and project results / workplan
		Is the strategy aligned with the programme logic / theory of change /	Check for alignment of strategy	Above

⁵ Look for partner engagement strategies, mechanisms, key events and policy targets, behaviour changes, communication strategies, other appropriate means to produce, deliver outputs and achieve results, etc

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		results (outputs)? (Are the adequate results to achieve the objectives?)	and results	
		Does the strategy link to other IDRC corporate strategies to reinforce corporate approaches, goals?	Check for links with other corporate / PI related strategies. Cross project workshops.	Above
		Monitoring, learning, adaptation Is there a monitoring plan that supports learning and continuous improvements (adjustments)?	Presence of an up to date monitoring plan, documentation of learning and revisions to workplans. Gender differentiated monitoring and learning. Reporting on lessons learned	Review of monitoring plan, lessons learned, revised workplans Interview with project and PI staff and managers
		Are self assessments (self evaluation) part of the work culture of the PI and its projects?	Presence of self assessment reports.	PI and project documentation. Interviews with PI and project officers.
		Have there been any unplanned results? Describe them and the circumstances that led to them.	Complete and up to date documentation and explanation of unplanned results.	Progress reports – corporate and project level Interviews with programme managers, partners
	To what extent have the objectives of the PI (including interpretation of program objectives) evolved to meet changing contexts, opportunities and constraints?	Evolution of context and objectives Have there been major changes in context or constraints and opportunities facing the PI? Describe them. Have the PI and project teams made subsequent appropriate changes to accommodate these?	Complete and up to date documentation of any major changes in context, constraints, opportunities Revised workplans and strategies.	Progress reports Revised workplans and strategies Interviews with PI and project staff
		Progress in achieving results / objectives To what extent has the PI made	Percentage of results / outputs delivered on time, on budget Perception of key partners on	Progress reports – corporate, PI and project level Monitoring reports

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		progress in meeting its stated objectives and delivering its results.	progress in achieving objectives.	Interviews with project and programme managers, COPS, partners.
	What are the factors that have supported or hindered achievements of objectives and results?		Understanding and articulation by programme and project officers of factors supporting or hindering achievements.	Interviews with project and programme staff, partners.
Effectiveness - Quality of outputs / products	To what extent are the outputs ⁶ products of the PI of high <i>quality</i> ⁷ ?	Describe the major outputs of the PI (and its sampled projects) by type. (scientific, popular, policy, other types.	Complete, up to date and accurate list of PI outputs, including: <ul style="list-style-type: none"> • Scientific articles in peer reviewed journals • Documented interaction with users and decision makers • Extension and Training Documents 	Documentation - list of outputs Interviews with project and programme managers
		Describe the peer review process to ensure that the results are of high quality.	Presence of peer review mechanism Results of peer reviews	Documentation Interviews with project, programme, COP managers and partners.
		To what extent do the outputs meet the quality criteria for research / scientific products developed by the Evaluation team. (See Annex 1)	Analysis and scores from scientific analysis of products.	Quality analysis by Team Interviews with sectoral / regional experts intended users, audiences and stakeholders.

⁶ Outputs include, but are not limited to, research reports and publications, websites and electronic lists produced, conferences, workshops and their proceedings, etc.

⁷ Quality is to be based on consideration of their scientific merit as assessed in relation to the relevant disciplines/fields, their relevance and appropriateness given the intended audience(s) and user(s), and context(s), and the purposes and objectives of the program.

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		To what extent do managers and stakeholders perceive the outputs to be of high quality?	Results of interviews with intended users (COPs, other stakeholders).	Interviews with project, programme, COP managers and partners.
	Identify the conclusions that can be drawn from projects research findings and contracted research, working papers.	Is the research sound, reliable, complete? Does it contribute new findings, ideas, insights to the development problems identified? Does the research include innovative, locally adapted solutions/interventions? Are there outcomes of test interventions?	Complete documentation of research findings from PI and projects. Analysis of conclusions in relation to strategic objectives of the PI	Research findings Criteria based analysis of team
Influence – outcomes Capacity (individual, institutional, network, policy levels)	To what extent has the work of the PI brought about changes in knowledge, attitudes, policies or practice in the behaviour, relationships, activities or actions of the people, groups and organizations with whom the PI and its projects are involved.	Overall consideration of capacity To what extent is the concept of capacity development / behaviour change considered and articulated in the work of the PI and its projects?	Presence of documented discussion of capacity and capacity development clearly reflected in the front end of a project or PI documentation and in monitoring and reporting throughout the life of the project, PI, COP.	Prospectus Project, programme plans Monitoring, reporting documents Special studies focused on behaviour changes in capacity, policy.
		Intended users To what extent are the intended users of, audiences for the EH products clear and purposefully identified in the results chain / programme theory, design of the product and workplan?	Clear identification of users, intended audiences in results chain / programme logic.	Prospectus PI and project results / workplans
		Intended uses/ changes Are the intended uses and desired behaviour changes clearly and purposefully identified in the programme and project workplans / results?	Identification of intended users and changes (outcomes) in project, programme design and workplans.	Prospectus PI and project workplans – results and outcome documentation Interviews with project, programme, COP managers and partners.

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
	To what extent has the dissemination, communication and use of the PI outputs brought about desired outcomes / behaviour change at the individual, institutional, network and policy levels?	<p>Strategies for capacity/ behaviour change</p> <p>Are outcomes supported at the programme and project level by clear strategies for achieving behaviour change at individual, institutional, network and policy levels?</p>	Presence and use of a strategy for achieving influence / behaviour change at individual, institutional and policy levels (as appropriate) built into PI and project workplans and management plans.	Prospectus PI workplans PI and project strategies Interviews with project, programme, COP managers and partners.
<p>Communication strategies</p> <p>Are desired changes / outcomes supported by clear dissemination and communication strategies?</p>		Presence and use of dissemination / communication strategies for reaching intended users / audiences.	Prospectus PI workplans PI and project strategies Interviews with project, programme, COP managers and partners	
<p>Measurement of changes in capacity / behaviour and state</p> <p>Are changes in knowledge, attitudes, motivation, policy or decision making, practice systematically recorded in monitoring processes and reporting?</p>		Methods and tools exist and are used for measuring changes. Monitoring reports capture measured changes and discussion around factors leading to or inhibiting the changes.	Monitoring tools Tools and methods for measurement of change Monitoring reports Interviews with project, programme, COP managers and partners	
<p>Are there measurable changes in the improved health status of people and environmental conditions</p>		Methods and tools exist and are used for measuring changes in state of health and ecosystems. Monitoring reports capture measured changes and discussion around factors leading to or inhibiting the changes.	Review of results of measurable changes Monitoring reports	
<p>Adaptive management</p> <p>Are observed and recorded behaviour changes used to verify or adjust project / programme objectives and aims?</p>		Monitoring reports contain recommendations for the implications of behaviour changes for any necessary adjustments in the management and implementation of the	Monitoring reports Reports to senior management and the Board Interviews with project,	

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
			programme, project, its future direction and other implications.	programme, COP managers and partners
		<p>Sustainability How sustainable have any capacity changes been over the life of the project / PI / COP?</p>	<p>Behaviour changes recorded cumulatively over time. Evidence that behaviour changes are significant enough to contribute to enhancing quality of life and permanently alter development status.</p>	<p>Monitoring and evaluation reports Reports to senior management and the Board Interviews with project, programme, COP managers and partners</p>
	<p>Research capacity To what extent have the PI and its projects contributed to building or strengthening capacities of researchers, organizations, research users and networks.</p>	<p>Individual researcher level Are changes in individual research's capacities evident in the PI and its projects?</p>	<p>Evidence of change in capacities in</p> <ul style="list-style-type: none"> • data collection/ analysis • problem solving or critical thinking • model building, theory testing • application of research generated knowledge to practice 	<p>Monitoring and evaluation reports Reports to senior management and the Board Interviews with project, programme, COP managers and partners</p>
		<p>Organizational level research capacities Are changes in organizational level research capacities evident in the PI, its projects and partners?</p>	<p>Evidence of organizational changes in systems, mechanisms, processes related to the capacity to:</p> <ul style="list-style-type: none"> • conduct research⁸ • manage research • conceive and generate research 	<p>Monitoring and evaluation reports Reports to senior management and the Board Interviews with project, programme, COP managers and partner</p>

⁸ Conduct research - data collection/ analysis, problem solving or critical thinking, model building, theory testing, application of research generated knowledge to practice.

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
			<ul style="list-style-type: none"> • use research results • create or mobilize research links to systematic policy or systems changes • research management 	
		<p>Research and users network⁹ capacities</p> <p>Has the PI and it projects brought about changes in network level capacity?</p>	<p>Evidence of EH projects, users, partners</p> <ul style="list-style-type: none"> • connecting beyond the boundaries of individual institutions or groups. • expanding / extending the reach of the PI and the EH concept to new user constituencies, stakeholders • giving voice to stakeholders who might not otherwise be heard. 	<p>Monitoring and evaluation reports</p> <p>Reports to senior management and the Board</p> <p>Interviews with project, programme, COP managers and partner</p>
		<p>What role have networks played in contributing to the quality, usefulness, action and policymaking , ownership and autonomy of EH research results?</p>	<p>COP documentation and analysis of the role of COPs in contributing to the quality, usefulness, action and policymaking , ownership and autonomy of EH research results.</p>	<p>COP monitoring and evaluation reports</p> <p>Interviews with COP members, PI and project staff.</p>
		<p>What has been learned about the management and governance of the EH COPs at the strategic level and the operational level?</p>	<p>Evidence of EHCOP lessons learned relating to</p> <ul style="list-style-type: none"> • Strategic level (core vision, concept); niche) • Operational level – leadership, internal 	<p>Lessons learned COPs</p> <p>Corporate monitoring and evaluation reports to management and the Board</p>

⁹ Networks – see The Intended Results of IDRC Support of Networks: Extension, Excellence, Action and Autonomy. Networks are defined as – a social arrangement comprising either organizations or individuals that is based on building relationships, sharing tasks, and working on mutual or joint activities. A forum for human exchange, enabling people to work together to generate knowledge and to develop skills while maintaining their autonomy. Does NOT apply to information access, data swapping transactions.

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
			management	
	<p><i>Influence on technology</i> What has been the influence of the PI and its projects on technology development, adoption or adaptation</p>	Describe the influence of the EH PI and its projects on the development, adaptation or adoption of technology in the EH field?		
		<p>Is there evidence of transformation of research results into new practices, technologies (devices), organization systems,</p> <p>Is there evidence of scientists interacting effectively with users leading to the adaptation or adoption of technologies?</p>	<p>Any evidence of the following:</p> <p>New practices (behavioural, e.g. protective clothing)</p> <p>New technology (e.g. water treatment, compost)</p> <p>New intervention</p>	Interviews with principal investigators, investigators, users, decision makers.
Policy influence	To what extent have the PI and its projects and COPs contributed to influencing policy?	<p><i>Conceptualizing policy change</i> Describe how the PI and its projects conceptualize policy influence? What do they mean by policy? Is there a standard way of defining policy?</p>	<p>Evidence of explicit definition of policy influence in the EH PI context at global, regional, national and local levels.</p> <p>Standard use of policy and policy influence across the PI and its projects (meaning the same thing).</p>	<p>Global corporate policy documents</p> <p>EH corporate conceptual model documentation</p> <p>PI and project documentation</p> <p>Interviews with senior managers, programme, and project officers, partners and COP members</p>
		<p><i>Policy direction - governance and leadership</i> Does the IDRC Board provide guidance on policy positioning, targets?</p>	<p>Evidence of governance and senior management leadership on policy positioning and targets</p>	<p>Board directives</p> <p>Management directives</p>
		<p><i>Policy cycle</i> At what stage of the policy cycle does the PI and its project intend to influence</p>	<p>Evidence of understanding of policy cycle and stages</p> <p>Targeted policy influence and</p>	<p>PI and project documentation on policy change</p> <p>Interviews with senior managers,</p>

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		policy? Is there a clear rationale for the particular stage of the policy cycle chosen?	rationale	programme, and project officers, partners and COP members
		<p>Planning for policy influence How well does the PI and its project plan for policy influence? Are there purposeful policy influence results identified?</p>	Evidence of targeted policy influence in the design of the PI and its projects, and in situation analyses.	Planning documents Situation analysis Interviews (as above)
		<p>Strategies for policy influence Does IDRC have explicit strategies for policy influence at corporate, PI and project level for policy influence?</p>	Evidence of explicit strategy of policy influence at corporate and PI and project levels.	Policy influence strategy documentation Interviews as above
		<p>Coherence of planned results How complete and coherent are the policy influence results and targets?</p>	Evidence of complete and linked set of policy results and targets Rationale for choosing the most significant policy results and targets in relation to corporate goals and global development challenges	Policy results Rationale Strategy Interviews with senior managers, programme, and project officers, partners and COP
		<p>Linking policy and practice How well does the PI and its project link policy influence and development practice at global, regional, national and local levels?</p>	Evidence of research policy results linked to development practice at global, regional, national and local levels – through partners, network members	PI and project plan and monitoring reports Interviews as above
		<p>Monitoring and measurement of policy influence To what extent has the PI and its projects influenced policy by:</p>	Results of interviews with key intended users Mapping and analysis of policy influence – high degree of convergence with intended outcomes / influence.	Interviews with key intended users, stakeholders Policy mapping and analysis
		1) <i>Expanding policy capacities.</i>	Evidence of the development of innovative ideas, the skills to	Results reported by PI

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
			communicate them, new talent for issues-based research and analysis.	Interviews with senior managers, programme, and project officers, partners and COP
		2) <i>Broadening policy horizons.</i>	Introduction of new ideas to key policy agendas Ensure that knowledge is provided to decision-makers in a form they can use, and nourish dialogues among researchers and decision-makers.	Results reported by PI Interviews with senior managers, programme, and project officers, partners and COP
		2) <i>Affecting policy regimes.</i> To what extent do research findings contribute to international policy	Modification or development of laws, regulations, policies, programs or structures.	Results reported by PI Interviews as above
		4) <i>Other policy influence</i>	Evidence of unplanned policy influence	Interviews as above
	To what extent does the work of the PI influence academic debates discourse.	Are there new scientific paradigms, concepts, models reflected in recent academic debates, discourse as a result of the work of the PI?	PI ecohealth concepts, challenge papers, policy briefs included in major regional and global conferences, seminars, debates of significance. Ecohealth concepts introduced in academic curricula.	Review of conference reports Interviews with principal investigators Analysis of academic literature related to ecohealth
	What factors facilitate and inhibit policy influence?	How well does the PI and its projects analyze factors that support and hinder policy influence?	Evidence of analysis and lessons learned	Monitoring reports Lesson learned Interviews as above

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		What institutional systems, mechanisms and processes ¹⁰ support policy influence?	Evidence of analysis of institutional systems, processes	Monitoring reports Lesson learned Interviews as above
	Learning and improvement – scaling up policy influence	Are lessons learned on policy influence captured and fed back into management decisions related to the design and resource allocation of future work?	Evidence of lessons, and management decision making related to policy influence lessons learned Budget allocations	Management interviews Minutes of meetings Board and senior management decisions
Sustainability of programme outcomes	What evidence is there of the sustainability of the PIs outcomes?	Are there measurable changes in the improved health status of people and environmental conditions that have been sustained over time?	Evidence of measurable changes in the improved health status of people and environmental conditions over time.	Monitoring reports Evaluation reports
Impact	To what extent has the work of the PI contributed to improved health status of people and ecosystems?		Evidence of measurable changes in the improved health status of people and environmental conditions.	Monitoring reports Evaluation reports
Risk management	To what extent have risks been identified and mitigated and effectively managed.	To what extent has the PI assessed the risks? To what extent has this been carried out jointly with programme managers, project teams and partners?	Existence of an accepted risk assessment methodology Preparation of a risk assessment jointly with field and programme managers. Degree of alignment – convergence of risks categories with those identified by stakeholder in interviews (under relevance).	Risk assessment analysis Risk register, ranking Management priorities – reflected in management meeting minutes
		To what extent has the PI identified and ranked risks in relation to the objectives	Risk register with ranked risks and proposed priority actions.	Risk register Management / corporate reports

¹⁰ Such as cross organizational learning teams, clear roles and responsibilities for policy influence, strategies for mainstreaming policy influence,

Key Performance Area	Key question(s)	Sub-questions	Indicators - evidence	Data sources and methods
		of the PI and its projects?		on ranked risks (priority risks)
		To what extent has the PI mitigated and/or accepted, managed the risks?	Management reporting on extent of risks mitigated and/or accepted / managed.	Management reports

Annex 3: Context for the Review

Institutional and corporate context

The IDRC Act (1970) mandates the Centre “to initiate, encourage, support and conduct research into the problems of the developing regions of the world and into the means for applying and adapting scientific, technical and other knowledge to the economic and social advancement of those regions...”¹¹ The Act also guides the development of the Corporate Strategy and Program Framework (CSPF) which is a 5 year rolling Program approved by the Board of Governors.

The 2005-2010 Corporate Strategy and Program Framework (CSPF) of the Centre is organized around three major program areas – Environment and Natural Resource Management (ERNM), Information and Communication Technologies for Development (ICT4D), and Social and Economic Policy (SEP) - operating in four developing regions (Africa, Asia, Latin America and the Caribbean, and the Middle East and North Africa. As shown in Figure 1, the Ecohealth Program Initiative is one of four Program Initiatives under the umbrella of the Environment and Natural Resource Management (ERNM) Program Area.

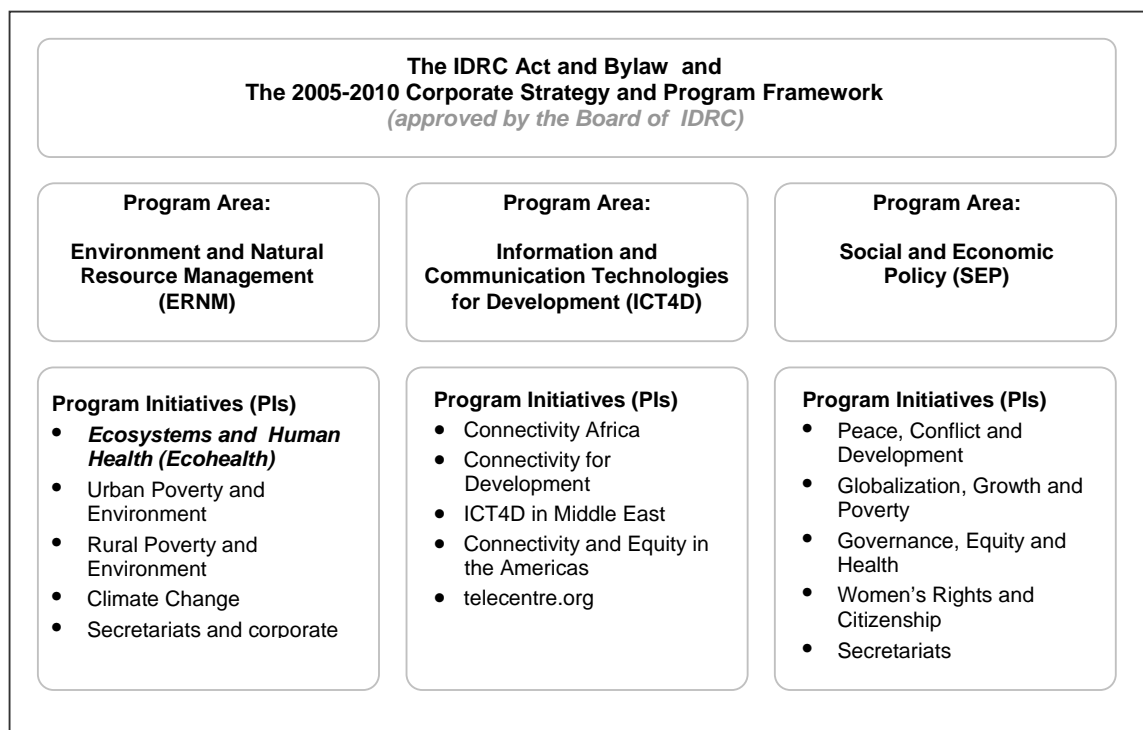
The Corporate Strategy and Program Framework (CSPF) sets out the overall corporate goals and strategy framework within which all IDRC programs are expected to operate. The CSPF 2005-2010 specifies three broad goals for IDRC's Programs¹²:

- Strengthen and mobilize local research capacity of developing countries
- Foster and support the production, dissemination and application of research results that lead to changed practices, technologies, policies and laws that promote sustainable and equitable development and poverty reduction.
- Leverage additional Canadian resources for research for development by creating, reinforcing, funding and participating in partnerships between Canadian institutions and institutions in the developing world.

Figure 1: IDRC Program Framework 2005-2010

¹¹ IDRC Act and General Bylaw. Objects and Powers of the Centre 4.(1)

¹² CSPF 2005-2010. Section 3-3, paras 66, 67, 68



The Corporate Strategy and Program Framework (CSPF) commits to assessing the Centre's performance according to four main criteria¹³ – namely, the extent to which the Centre contributes to:

1. Building a favourable environment within which research can be carried out and which provides opportunities for individual researchers in the South
2. Supporting research that is credible, i.e. scientifically valid and methodologically sound;
3. Influencing practices, technologies, policies and laws that contribute to sustainable and equitable development and poverty reduction;
4. Building explicitly Southern agendas into current international policy debates and developmental decision-making at all levels.

Within the context of these corporate objectives and expectations, the Review Team assessed the progress of the Ecohealth Program Initiative in meeting its objectives as set out in the Prospectus for the Ecosystem Approach to Human Health Program Initiative 2005-2010¹⁴, specifically:

1. Improved understanding of social, political, economic, and ecological interactions and development of knowledge based interventions for improved health and well-being outcomes, through participatory research, led by Ecohealth partners jointly with the local and policy communities, on selected thematic entry points. *(Research and interventions)*
2. More informed policy making and improved policy implementation on issue areas related to health and the environment, fostered through the knowledge generated by research projects, multi-stakeholder processes used, and more broadly, the global and regional communities of practice (networks) Ecohealth supports. *(Strengthening the linkage of research to policy)*
3. A growing body of researchers (including young researchers) capable of designing and carrying out Ecohealth research that is transdisciplinary and participatory, engages multiple stakeholders and addresses gender and social equity analysis. *(Capacity building)*

The expected results and outputs for the PI over the period 2005-2010 are:¹⁵

¹³ CSPF 2005-2010, Section 3 para 69.

¹⁴ Prospectus for the Ecosystem Approach to Human Health Program Initiative 2005-2010, page 6.

¹⁵ Prospectus for Ecohealth PI 2005-2010, Expected Outputs, page 7

1. A portfolio of projects that apply Ecohealth approaches, with meaningful stakeholder participation, and that result in improved ecosystem and human health and well-being outcomes, in order to improve the present understanding and facilitate moving toward equitable and sustainable development.
2. Global and regional policy and knowledge networks engaged with the use of Ecohealth approaches and our research partners, which facilitate the uptake of evidence-based results and promote policy development and implementation based on those results.
3. Cohorts of young researchers with capacity and experience in doing Ecohealth research.
4. A second International Forum on Ecosystem Approaches to Human Health that will showcase increased capacity for Ecohealth research and consolidate existing regional communities of practice.
5. Peer-review publications of supported research authored by our partners to facilitate the recognition, continued refinement, and up scaling of Ecohealth approaches, raise the visibility and profile of the PI, contribute to the scientific excellence of the work, and create a pool of expert trainers and reviewers.
6. Websites for information dissemination, partner support and dialogue/exchanges to facilitate more effective networking, capacity building, and expand the reach of the PI.
7. Meta-analysis of research results and methodologies/approaches providing a global perspective of the Ecohealth approach.
8. Evaluation studies and reports that analyze the results of these on-going objectives, improve training initiatives, and enable flexibility and responsiveness within the PI's programming and operational practices.
9. Continued refinement and deepening of the Ecohealth approach through ongoing development with partners of methodological approaches and strengthening of analytical frameworks (particularly around social and gender analysis).

Conceptual and theoretical context

The Review Team understands that the conceptual and theoretical context and basis for the Program Initiative is that of the **ecosystem approach to human health , often shortened to 'ecohealth'**. The concept is rooted in the overall development of ecology during the second half of the 20th Century, which saw a shift in the definition of ecosystems as purely biochemical and biophysical to that which included human parameters (social, political, economic) as equally important elements of ecosystems¹⁶.

The approach “explores the relationships between various ecosystem components to define and value the priority determinants of health and human well-being.”¹⁷ It “recognizes that there are inextricable links between humans and their biophysical, social, political and economic environments that are reflected in an individual's health”¹⁸ and that environmental degradation is a main pathway through which health is impacted¹⁹.

'Ecosystems' are defined by the PI relative to the research problem, referring to **social, political, economic, and ecological** sub-systems in interaction, both on a temporal and spatial scale. Human activities (or stressors) alter these contexts and have positive or negative effects on individuals and communities involved. The broad approach as applied by the PI has three core elements or pillars deemed key to the improvement of health and well-being: **transdisciplinary, social and gender equality, and stakeholder participation**. Together, these elements provide an understanding of change that explicitly links the interacting sub-systems.

As stated in the IRDC Act and General By-Law²⁰, research is a foundational goal. Clarity of intent and purpose of research funded by IRDC is important to ensure that research products are appropriate to

¹⁶ Health: An Ecosystem Approach. Jean Lebel. IDRC 2003. Page 4

¹⁷ Forget and Lebel, 2001, p S 16.

¹⁸ Mariano Bonet, quoted in Lebel, 2003, p 2.

¹⁹ Prospectus for the Ecosystem Approach to Human Health Program Initiative 2005-2010, page 6.

²⁰ Research includes any scientific or technical inquiry or experimentation that is instituted or carried out to discover new knowledge or new means of applying existing knowledge to the solution of economics and social problems.

their intended outcomes. The Review team sought to clarify and position the type of research engaged in and supported by the Ecohealth Program.

It is the understanding of the Review Team that the EHPI invests in research activities that (a) build upon basic research (either directly or indirectly), (b) translate the findings of research into application or policy; (c) apply research methods (often community based participatory research or formative research) to the understanding of a context-specific problem and/or its resolution; and (d) develop policy and/or behavioral interventions that are evidence based and designed to improve responses to a defined problem.

Operational Strategy Context

The Corporate Strategy and Program Framework stresses the following overarching operational principles for the work of Programs in 2005-2010²¹:

- Capacity building and sustained and continuous mentoring
- Investing ahead of the curve
- Policy relevance – with an emphasis beyond policy formulation to policy implementation
- Scientific excellence as a mainstay of the Centre's support for research
- Social innovation
- Acceleration of the support for networks to extend the reach of knowledge to policymakers, civil society and the private sector
- Regional specificity and context
- Effectiveness and resilience – consolidation, scaling up, larger projects for a critical mass to produce results of greater value, reduce transaction costs, focus on more complete projects

The CSPF indicates that strategic choices in Program activities are to be made taking into account balancing continuity with change in portfolio activities, introducing measured change commensurate with modest resource increases, and the potential for scaling up that is likely to lead to developmental outcomes through the processes of policy formulation and implementation.

Working within these corporate parameters the Ecohealth Program Initiative 2005-2010 aims to build on the successes of the previous generation of Ecohealth programming **with a more purposeful focus on consolidation, institutionalization and sustainability through scaling up, policy influence and support for Communities of Practice**²². In addition, the PI has committed to incorporate the recommendations from previous reviews and evaluations, namely:

- revisit the scope of the PI to address emerging ecosystem and human health challenges;
- pay greater attention to health outcomes of the research supported;
- communicate more effectively evidence-based results to policy-makers ;
- support additional formal training opportunities on Ecohealth;
- strengthen gender integration and analysis, including attention to power relations;
- support regional scientific gatherings and methodological symposia;
- improve program delivery through fewer but larger projects, independent peer review in project selection, use of objective criteria and mid-term reviews;
- increase strategic partnering; and
- strengthen capacity building through targeted training and expanded participation in project workshops.

²¹ Corporate Strategy and Program Framework 2005-2010. Section 5.

²² CSPF 2005-2010, page 7-3

Annex 4: Projects visited by the External Review Team

Asia

1. Asian Partnership on Avian Influenza Research (APAIR) effectiveness of control measures of Avian Influenza (104320)
2. APAIR pandemic influenza preparedness: policy analysis (104165)
3. Avian Influenza in Migratory Birds: Regional Surveillance and Monitoring Network. (103190)
4. Characteristics and dynamics of backyard poultry raising systems in 5 Asian Countries in relation to the reduction and management of avian influenza risk (104319)
5. Socio – economic impacts of HPAI outbreaks and control measures on small scale and backyard poultry producers in Asia (104164)
6. Avian influenza. Analysis of risk behaviors (...)
7. Eco – Bio - Social Research on Dengue in Asia. (102741)
8. Risk Assessment from Leather Tanneries in Ulaanbaatar (Mongolia) (103053)

Latin America

1. An ecosystem approach to factors associated to Aedes Aegypti in Argentina and Uruguay (101814)
2. Environmental and health impacts of small-scale gold mining in Ecuador. Phase II (101425) (100662) (101379)
3. Environmental and health impacts of floriculture in Ecuador. Phase II: research consolidation and dissemination (103697) (100661)
4. Human health and changes in potato production technology in the highland Ecuadorian agro – ecosystem. Phase II (101810) (00321) (101816)
5. Integrating eco health assessment in the Americas: evaluate and strengthen health and environment impact assessment laws and policies (103606)
6. Community of practice in eco health (COPEH) Consolidation. Phase I (101818)
7. Malaria transmission and land use management in the Ecuadorian Amazon: Identifying ecosystem determinants of malaria risk for appropriate and sustainable control (103696)
8. Manganese mining. Phase II (103052) (102379) (100662)
9. Community of practice in eco health (COPEH) Consolidation. Phase I (101818)
10. Institutionalizing a LAC training and awards program for the development of research projects with an eco health approach. INSP (103728)
11. INSP eco health summer course on vector borne diseases (103044)
12. Eco health in focus cities. Lima (104262)
13. Research. Policy meta-analysis in LAC and participation in ABRASCO meeting

14. Ecosystem approaches to communicable diseases in LAC (103696)

Sub-Saharan Africa

1. Effects of Synthetic Pesticides on Human Health (Benin) (101831)
2. Managing agricultural biodiversity for better nutrition and health, improved livelihoods and more sustainable production systems in Sub-Saharan Africa (103648)
3. Environnement et santé dans le NEPAD. Projet sur les déchets, assainissement, santé et développement en milieu urbain et peri-urban en Afrique (101809) (102470)
4. Integrated Program on Malaria in Africa (IPMA) (104263)
5. Maîtrise de l'assainissement dans un écosystème urbain de Yaoundé (Phase II) (103605) (100772)
6. Projet Ecosystème et Santé Maraîchers à Cotonou (101832)
7. l'Institutionnalisation de l'Approche Ecosystème et Santé Humaine dans les Universités Africaines (102148) (103087)
8. Bourses de formation Écosystèmes et santé humaine (ÉCOSANTÉ) - Afrique subsaharienne (103726)
9. COPEH - Subsaharan Africa (incl. training and small grants in West Africa) (102474)
10. Supporting a Community of Practice in Ecohealth (COPEH-MENA) (103208)

Annex 5: Interviews conducted

ASIA

Thailand

Ministry of Health

- Dr. Suwit Wibulpolprasert. Senior Advisor on Disease Control. Office of the Permanent Secretary. Ministry of Health. Thailand and Chairperson APAIR Thailand Network and Chairperson of APAIR International Steering Committee.
- Ms. Pornpit Silkavute . BSc Pharmacy, MSc Biotechnology. International Cooperation Group, Health Systems Research Institute (HSRI) Ministry of Health. Thailand
- Dr. Pongpisut Jogudomsuk. Director Health Systems Research Institute (HSRI). Ministry of Public Health. Bangkok, Thailand
- Dr. Chitti Chansang. Medical Scientist. National Institute of Health. Department of Medical Sciences. Ministry of Public Health. Bangkok, Thailand.

Mahidol University

- Associate Professor Dr. Parntep Ratanakorn. Director. Monitoring and Surveillance Center for Zoonotic Diseases and Wildlife and Exotic Animals. Mahidol University.
- Dr. Piyarat Butraporn. Department of Social and Environmental Medicine. Faculty of Tropical Medicine. Mahidol University. Bangkok, Thailand.
- Professor. Dr. Amaret Bhumiratana. Department of Biotechnology. Faculty of Science. Mahidol University. Bangkok, Thailand.

University Ubon Ratchathani

- Associate Professor Dr. Kreingkrai Choprakarn. Native Chicken Development Coordinator Office. University of Ubon Ratchathani. Thailand
- Dr. Narintorn Boonbraham. Deputy Dean, Faculty of Agriculture. University of Ubon Ratchathani. Thailand
- Assistant Professor. Dr. Somchai Swasdipan. Researcher , Faculty of Agriculture. University of Ubon Ratchathani. Thailand
- Assistant Professor. Dr. Kanokwan Manorum. Researcher, Faculty of Liberal Arts. University of Ubon Ratchathani. Thailand
- Dr. Suttini Wattanakul. Researcher, Siridhorn Public Health College. University of Ubon Ratchathani. Thailand

World Health Organization

- Mr Chawalit Tantinimitkul. National Program Officer. Disease Prevention and Control. WHO Country Office in Thailand

Vietnam

Ministry of Science and Technology

- Dr. Le Minh Sat. Ministry of Science and Technology and National APAIR Chairman in Vietnam
- Dr. Le Viet Ly, Professor and Vice President of the Animal Husbandry Association of Vietnam and Special advisor to Dr. Sat

Ministry of Agriculture and Rural Development (MARD)

- Dr. Vu Chi Cuong. Vice Director. National Institute of Animal Husbandry (NIAH). Ministry of Agriculture and Rural Development (MARD) of Vietnam.

- Dr. Nguyen Ngoc Que. Vice Director. Center for Agricultural Policy of the Institute of Policy and Strategy for Agricultural and Rural Development. MARD
- Dr. Truong Van Dung. Director. National Institute of Veterinary Research (NIVR) of MARD
- Dr. Bguyen Tien Dzung. Virologist. NIVR / MARD
- Dr. Dinh Xuan Tung. Head, Department of Economics and Family Systems. National Institute of Animal Husbandry (NIANH). Ministry of Agriculture and Rural Development (MARD). Acting International Coordinator APAIR

Partnership for Animal and Human Influenza (PAHI)

- Mr. David Payne. Partnership and Coordination Specialist. Partnership for Animal and Human Influenza (PAHI). MARD.
- Ms. Dao Thu Trang. Secretariat Management . Partnership for Animal and Human Influenza (PAHI). MARD.

Ministry of Health

- Dr. Nguyen Huy Nga. Director General. Vietnam Administration of Preventive and Environmental Medicine. Ministry of Health.

World Health Organization (WHO)

- Dr. Jean Marc Olivé. WHO Country Representative in Thailand.
- Dr. Nicole Smith. Epidemiologist. Communicable Diseases, Surveillance and Response. WHO Thailand Country Office.

Food and Agriculture Organization (FAO)

- Dr. Jeffrey Gilbert. Avian Influenza Technical Coordinator. FAO. Vietnam.
- Dr. Andrew Bisson. Deputy Team Leader and Technical Advisor. FAO. Vietnam.

Mongolia

- Dr Chimedsuren Chair, Epidemiology and Biostatistics, School of Public Health, Health Sciences University of Mongolia
- Dr Boldmar, Public Health Officer from Health Promotion Department, Ministry of Health, Mongolia
- Dr Tuyaa, Inspector for Industries, Ministry of Labor and Industry, Mongolia
- Dr Sumberzal, Dean, School of Public Health Health Sciences Unviwersity of Mongolia
- Dr Lkhasuren Oyuntogos, Chair, Occupational and Environmental Health, School of Public Health, Health Sciences Unviwersity of Mongolia .

LATIN AMERICA

Argentina

- Professor Nicolas Schweigmann. Professor and Researcher of the Faculty of Sciences. University of Buenos Aires.
- Dr. Ernesto de Titto. National Director of Health Determinants and Research. Ministry of Health of Argentina.
- Dr. Antonio Pages. PAHO/WHO Country Representative in Argentina

Ecuador

- Dr. Mauricio Espinel. Director of the International Health Training Center and President of the Ethics Committee of the Universidad San Francisco de Quito, Ecuador
- Dr. Jaime Breilh. Director, Health Department. Universidad Andina “Simon Bolivar” and Executive Director of CEAS.

- Dr. Oscar Betancourt. Executive Director of the Fundación para la Salud y el Desarrollo (FUNSAD). Quito, Ecuador.
- Dr. Raúl López, Director Health Unit Casa Cuna Gargotena Posse. Quito. Ministry of Health of Ecuador and Professor of Epidemiology and Research Methods. Faculty of Medicine. University Central de Ecuador
- Dr. Donald Cole. Head, Agriculture & Health Division, International Potato Center, Associate Professor, Department of Public Health Sciences, Faculty of Medicine, University of Toronto
- Dr. Fatya Orozco. Researcher. Centro Internacional de la Papa (CIP)
- Ing. Ana Quan. Environmental Health Advisor. PAHO/WHO Office in Ecuador

Mexico

- Horacio Riojas - Head Environmental Health Unit. INSP
- Mario Henry Rodríguez. Director INSP
- Dr. Enrique Leff. Institute of Social Sciences. National University of Mexico (UNAM)

Peru

- Ruth Arroyo. Public Health and Executive Director of ECOSAD.
- Fernando Paul Ceron Valencia. Psychologist. ECOSA
- Hugo Villa Becerra. MD. ECOSAD
- Magaly Oviedo. Anthropologist. ECOSAD
- Jose Valle Bayoa. MD. ECOSAD
- Anita Lujan Gonzalez. Nurse. ECOSAD
- Walter Varillas Vilchez. Sociologist. ECOSAD
- Edgardo Valentin Atocha. Toxicologist. ECOSAD
- Eva Delgado Rosas. Sociologist. ECOSAD

Uruguay

- Dr. Roberto Bazzani. Regional EH for LAC Countries
- Roberto Salvatella. Regional Advisor on Chagas Disease Prevention and Control. PAHO/WHO
- Fernando Dora. PAHO/WHO Country Representative in Uruguay
- Dr. Cesar Bassio. Associate. Professor, Director, Vegetal Protection. Faculty of Agronomy. Universidad de la República. Uruguay.
- Dr. Sonnia E. Romero Gorski. Director of Social Anthropolgy. Faculty of Humanities and Education Sciences. Universidad de la República. Uruguay.
- Dr. Maria Martínez. Enthomolgist Faculty of Sciences. Universidad de la República. Uruguay
- Prof. Ingrid Roche. Faculty of Architecture. Universidad de la República. Uruguay.

SUBSAHARAN AFRICA

Benin

- Prof. Benjamin Fayomi, Unité d'Enseignement et de Recherche de Santé au Travail et Environnement / Faculté des Sciences de la Santé, BP 188, Cotonou, Benin
- Dr. Raymond Vodouhe, plant biodiversity 103648, Bioversity, IPGRI, Cotonou
- Dr.Ir. Simplicie Davo Vodouhê, OBEPAB, Cotonou
- Jean Claude Kéké, Economist, COPEH, Benin

- Fourn Léonard, Epidemiologist, COPEH, Benin
- Michel Boko, Geography, University of Abomey-Calavi, Benin
- David Houinsa, sociologist, COPEH, Benin
- Pascaline Asob, Agroeconomist, COPEH, Benin
- Yédji Arsène Roméo, IT, COPEH, Benin
- Focus group, Vegetable growers, Houéyho, Cotonou, Benin
- Focus group, Cotton growers (Albert, Rigobert, Colette, Louise), Dridji at OBEBAB, Cotonou, Benin
- Calixte Mesmer Nahum, Mairie de Cotonou, Benin

Cameroun

- Ngnikam Emmanuel, Laboratoire Environnement et Sciences de l'Eau (LESEAU) Ecole Nationale Supérieure Polytechnique (ENSP) de Yaoundé BP 8390 Yaoundé
- Tchigangkong Thomas, President CAD, Melen 4, Yaoundé
- Tietche Felix, pediatrician, University Hospital, Yaoundé
- Noumba Isidore, economist, Laboratoire Environnement et Sciences de l'Eau (LESEAU) Ecole Nationale Supérieure Polytechnique (ENSP) de Yaoundé BP 8390 Yaoundé
- Djombe Guy, PhD student, CAMRAIL, Yaoundé
- Prof. Mogoué Benoit, Dept. of Geography, University of Yaoundé 1

Senegal

- Prof. Anta Tall Dia, Insitut de Santé et Développement, University of Dakar, Senegal
- Oumar Cisse, Executive Secretary, Institut Africain de Gestion Urbaine, Dakar, Senegal
- David Samuel Njiki Njiki, Executive secretary, NEPAD environment initiative, Dakar, Senegal
- Cheik Fofana, Assistant to the executive secretary, NEPAD environment initiative, Dakar, Senegal
- Eyba Ba, president, cadre local de concertation, Project 103045-001
- Fatou Diop, member, cadre local de concertation, Project 103045-001
- Geneviève Gravel, IDRC scientist, Project 103045-001
- Dabiré Ernest, IDRC Regional Office, WARO, Dakar
- Forget Gilles, IDRC, Regional Office, WARO, Dakar

MENA COPEH - Cairo

- Rached, Eglal, Regional Director, Middle East, North Africa
- El Fattal, Lamia, Senior Program Officer – MERO
- Mokdar, Ali, Centre for Development Services (COPEH MENA)
- Gaber, Dr Hesham. Vice Dean for Community Development and Environmental Affairs, Faculty of Agriculture. University of Alexandria. (COPEH MENA)

GLOBAL PI and CORPORATE

- Bazzani, Roberto, Senior Program Specialist - LACRO
- Boischio, Ana, Senior Program Specialist - Ottawa
- Charron, Dominique, Team Leader - Ottawa

- Cohen, Marc, Grant Administrador - Ottawa
- Dabiré, Ernest, Senior Program Specialist – WARO Dakar
- De Plan Renaud, former Senior Program Specialist - Ottawa
- El Fattal, Lamia, Senior Program Officer – MERO
- Faruqui, Naser, Former UPE Team Leader - Ottawa
- Forget Gilles, Head, Regional Office WARO, Dakar
- Labatut, Jean-Michel, Senior Program Specialist - Ottawa
- Mallee, Hein, Senior Program Specialist - ASRO
- Orosz, Zsafia, Research Officer - Ottawa
- Sanchez, Andrés, Senior Program Specialist - Ottawa

Corporate

- Rohinton Medhora, Vice-President, Programs and Partnership
- Lauchlan Munro, Director, Program and Policy Group
- Jean Lebel, Program Director, Environment Natural Resource Management
- Sharon Messerschmidt, Risk Management and Internal Audit
- Fred Carden, Sarah Earl, Colleen Duggan, Tricia Wind - Evaluation Unit

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- Prof. Elizabeth Stone, Dean, Ontario Veterinary College
- Prof. Carlos Morel, Director General, FIOCRUZ, Ministry of Health, Rio de Janeiro, Brazil
- Dr Waltmer Toews, University of Guelph, Canada
- Dr Marcel Tanner, Director, Swiss Tropical Institute, Basel, Switzerland
- A. David Brandling-Bennett, Deputy Director. Malaria. Infectious Diseases. Global Health Program. Melinda & Bill Gates Foundation
- Anastasia Pantelias. Associate Program Officer, Melinda & Bill Gates Foundation Gates Foundation.
- Dr. Luiz Augusto Galvao. Area Manager. Sustainable Development and Environmental Health, Panamerican Health Organization / World Health Organization
- Dr Joachim Otte, FAO, Pro-poor Livestock Initiative Program, PPLPI Division
- Dr M El Ashry, UN Foundation; former head of GEF
- Dr Kenneth Bridbord, Director, Division of International Training and Research, Fogarty International Center, NIH
- Dr Josh Rosenthal, Deputy Director, Division of International Training and Research, Fogarty International Center, NIH
- Dr Robert Gilman, Center for Global Health, Johns Hopkins Medical Institutions
- Prof. Salimata Wade, Laboratoire de Nutrition, University of Dakar, Senegal

Annex 6: Regional Findings and discussion points

The following details of regional findings were cut from the main Review Report because of the page limitation and are included in the Annexes so that the information will not be lost.

Effectiveness

Delivery and achievement of results at field level

Many positive examples were found where the PI and project leaders have succeeded in establishing and nurturing multidisciplinary teams, expanding the application of ecohealth concepts, and engaging community leaders in work that has led to inspiring results. Overall however the Review Team found mixed and highly variable performance in the delivery and of project outputs in terms of scientific quality and quantity of outputs, and engagement of constituencies.

In **Latin America** positive results were found in Mexico where the main ecological, biological, social and economic factors associated with the transmission of malaria were identified and new community-based strategies for malaria control were successfully implemented in Oaxaca, Mexico. DDT spraying was replaced with mosquito breeding site management and cases dropped from over 15 000 in 1998 to a third by 2001. As an outcome of this project Mexico has been able to eliminate its reliance upon DDT for malaria control. In 2004, the project was expanded to eight countries (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama). PAHO/WHO is providing additional technical advice and the financial support is provided by UNEP/GEF. In these eight countries, 202 demonstration areas were implemented. Between 2004 and 2007, the number of cases was reduced by 63% (from 2,439 to 914) without the use of DDT or any other persistent insecticide. Progress has been made to repackage about 200 tons of DDT and other persistent insecticides (POPs) found in the eight countries for final safe destruction in Holland.²³

In Ecuador, a two-phase project has been in progress in the Granobles River Basin since 1998 analyzing the environmental, social and human health impacts of large-scale industrial floriculture. Some project results showed elevated exposures to pesticides, important social disruptions of the labor force and complex economic and political issues emerging from the rapid expansion of this industry. The findings of the project provided important inputs for the implementation of the European Flower Label in Ecuador. Ongoing work has led to provide technical advice in the redrafting of national legislation in the Country pertaining to agricultural practices. The results and lessons learned from this project are now targeting other agro industrial developments in Ecuador, in particular the banana and broccoli plantations. It is expected that this project with some local adaptations will be replicated in Peru²⁴.

In **West and Central Africa** the Review Team notes that one of the most striking features of Ecohealth PI is the collaboration of communities (of vegetable farmers, waste collectors, cotton growers, dwellers of shanty towns) working directly with a multidisciplinary team of doctors, engineers, sociologists, agronomists, geologists and chemists and municipal or even central authorities. The Ecohealth PI has been influential in bringing scientists out of academia and research institutions and political and administrative officials out of their offices to discuss and address practical development problems with communities. Tangible outputs reflect local demand and are seen in interventions, infrastructure and behavioral practices.

Development results are evident from projects reviewed in Africa and appear to be based as much on community action as on scientific evidence. For example cotton growers in Benin abandoned the use of pesticides themselves after understanding the effects of pesticides on their health. Vegetable growers in Cotonou built latrines and recycled organic waste. Poor urban dwellers in Cotonou have access to cleaner water and paved side walks as a result of projects, and the frequency of diarrhea

²³ Malaria Control in Mexico without the use of DDT project 100818

²⁴ Floriculture in the Granobles River Basin in Ecuador.

has been reduced by 30%. Waste recyclers in Dakar now explore other alternatives for their livelihoods as a result of a greater understanding of the effects of unprotected exposure to waste on their health. A number of the projects contributed to the empowerment of women and communities by giving voice to their concerns and development priorities. The cohesion achieved among scientists and stakeholders in Dakar, Cotonou and Yaoundé will require sustained investment in consolidating ongoing communication and leadership by the involved project officers²⁵.

In Asia the projects visited were too new to judge actual results. While there are positive signs of increased coordination of projects through the platform of APAIR, there were also signals of difficulties among stakeholder groups (COP and project research team) in clearly understanding and operationalizing the ecohealth concept in the context of their countries²⁶. In addition, most of the projects visited in Asia seemed to be top-down rather than community-based as they were designed primarily by researchers with occasional consultations with policy makers and limited involvement of communities. For APAIR to succeed in being a relevant platform for avian influenza and emerging diseases IDRC will need to provide long term support to fully engage relevant stakeholders in the region, a two track proactive strategy (bottom-up and top-down) and better coordination with other relevant large players such as FAO, WHO and multilateral agencies. In one project site visited in Asia (not related to APAIR), the Review Team was concerned about the visible occupational and health hazards of the project site and the apparent lack of monitoring and risk management. This case has been discussed in detail with the relevant PI Program Officers.

Regional Findings - Capacity Building

In Latin America and elsewhere, Ecohealth PI has been a school for many, not just by providing local opportunities to be engaged in research, but also to be part of productive teams and a movement. In general, individual researchers have benefited from the different projects. Most indicate that they are better equipped and able to collect and analyze data and are more skilled in model building and complex thinking. In spite of this progress, these improvements do not always reflect directly on relevant institutional changes on how research projects/programs are being decided, organized and /or managed. This applies in particular to some of the larger research institutions, which have the potential to influence others in their own countries²⁷. In this context, it would be useful for IDRC to consider further expanding a two-track strategic approach. One aiming at the improvement of individual skills, and a second one, expanding the programs and activities addressed to capacity building at institutional level.

In West and Central Africa, the Review Team found a strong emphasis on capacity building visible at many levels where the Ecohealth PI empowers local scientists to take leadership in project development and implementation. In turn they become the capacity builders for their collaborators and a second generation of students. An impressive effort has been made by the Introductory Ecohealth courses at the University of Benin on environmental management and water quality (DESS-MEQUE) and environmental management and nutrition (GENA). Study grants have been allocated on a competitive basis and regional workshops have been offered on household waste management. However, there has been less investment in building capacity for research in general so that while individual scientists' capacities have improved, more is required to ensure sustainability and to strengthen data and economic analysis and scientific writing.

Capacity building within communities is driven by extension activities which are often led by NGOs who are key stakeholders in the projects. A very good example is the NGO ERA-Cameroun producing newsletters (La gazette du quartier) and extension material for environmental sanitation. In this case the Review Team observed a clear communication strategy with a sustained publication record. Intended uses are clearly identified and participants confirm the efficacy of communication. Capacity changes appear to be more sustainable when Ecohealth thinking is taken up by boundary partners (e.g. ERA Cameroun) who are capable of seeking further funding for communication and development action.

²⁵ Review internal synthesis report. West and Central Africa field visits.

²⁶ Asia interviews and internal Review report.

²⁷ This observation was noted in the LAC field visits, but also applied more generally across regions.

However, there seems to be little capacity in developing outcomes assessment of programs for monitoring scheme in place to assess the changes in capacity and level of information in communities. Except within the research protocols there appears to be no monitoring of health outcomes with regard to levels of knowledge in the communities. The involvement of public institutions is weak and ineffective. "L'Etat est très moins, la mairie ne réagit jamais. L'état est associé mais ne contribue pas". This discussed further in the policy influence section.

In Asia The Review Team looked specifically at APAIR in Asia (projects in Thailand and Vietnam). With regard to building research capacity not all APAIR projects have made the same progress. Three are at different stages of the data collection and analysis (backyard poultry production, socioeconomic impact and surveillance of wild/migratory birds). The remaining three were still discussing methodological issues. According to the 2007 Annual Report of the APAIR activities, with APAIR – IDRC financial support, 88 key researchers have been involved directly in project development activities, representing 24 research institutions in the five Asian countries. **It is worth noting that for some countries this was the first time that livestock scientists have worked together with human health scientists in the same research projects.**

The specific contribution of IDRC and recognition of its niche as not widely known or recognized by key stakeholders outside of the APAIR network. For example, the APAIR projects in Vietnam are not known outside the APAIR network and they are not included in the National Operational Program for Avian Influenza and Human Influenza 2006 – 2010. Some of the individuals interviewed recall initial meetings with IDRC staff, but they also mentioned that no effective follow up was established. A similar lack of knowledge was expressed by some of the international stakeholders in terms of the specific value added of the IDRC Ecohealth contribution to avian influenza programs funded largely by others.

Regional Findings – Scientific Quality

In West and Central Africa the scientific outputs of most of the research projects visited were not clearly evident.. Research results were found almost exclusively in reports, theses or conference proceedings. With the exception of Forget and Lebel (2001) the Review Team did not find a publication from this region in international peer reviewed journals. Searches in public medline (<http://www.ncbi.nlm.nih.gov/pubmed/>) for the names of the physicians involved in West and Central Africa projects did not result in any results relevant to the reviewed projects. There are however a series of annual reports, MSc and PhD documents available and international conferences seem to be attended on a regular basis. The Review Team is aware that other projects in the region have a commendable record of scientific publication. By contrast, projects in Latin America have a strong record of publication in internationally recognized journals as well as participation by project leaders in international and national meetings.

Factors affecting the quality of research included the inadequacy of initial study design, problems in study implementation (for example, failure to collect a sufficient number of independent observations or enroll enough subjects, and lack of rigor in measurement instruments). A review of project reports in West and Central Africa showed that basic univariate statistics are often applied using Epi Info. Averages are given with two decimals but no confidence limits.²⁸ In some cases, these limitations follow from inadequate study design or implementation. In the expert opinion of the Review Team, conclusions made without statistical analysis as in the example footnoted are not valid in developing scientific evidence for action. Moreover, there is a failure to incorporate the transdisciplinary model expressed in the Ecohealth prospective in terms of coherent methods to relate outcomes of different disciplines in a comprehensive way.

²⁸ Example: Pesticides in Cotton production in Benin (101831) 4th report: L'anémie : Les résultats ont révélé que la prévalence de l'anémie au sein des enfants exposés est de 83,87% avec 12,90% sous forme sévère, 54,84 sous forme modérée et 16,13 sous forme bénigne. Chez les enfants non exposés, le taux d'anémie est de 70,37% avec 7,40 sous forme sévère, 48,14 sous forme modérée et 14,81 sous forme bénigne. Ainsi, les enfants exposés aux pcs sont plus vulnérables à l'anémie comparativement aux enfants non exposés.

Further expert review revealed that environmental risk factors for health have been identified with regard to pesticide use in Benin, but not sufficiently with regard to environmental sanitation in Yaoundé. The sources of contamination of drinking water is likely to have multifactorial elements in the environment and in the household which would require a more sophisticated problem definition and data collection as well as multivariate analysis of risk factors. It appears that while research designs in most cases are related to stated project objectives, the implementation of these projects is over simplified and the analysis of the data lags much behind what could be analyzed using existing data, and what could be obtained by more comprehensive data collected that could support more in-depth statistical analyses. There is a large untapped potential of relatively good quality data in West and Central Africa which is not sufficiently analyzed, and not written up or published. This assessment is confirmed by the recommendations (need for building up of a real database and analytical data analysis) by a visiting ecohealth specialist visiting Benin in January 2007²⁹.

The picture in projects visited **in Latin America** appeared quite different with regard to the quality and quantity of research outputs. Because of factors related to the solid growth of ecohealth concepts and investments in ecohealth in Latin America prior to IDRC investment, the community of partners has been able to publish peer reviewed papers at a reasonable rate. Nonetheless, the Review Team notes that much more can be done by IDRC to encourage and support high quality publications. For instance, one option could be to develop north-south, and south-south partnerships between investigators, including to provide mentorship in these skills and to expand the scope and support to researchers in similar training opportunities such as those provided by the Fogarty Center of the NIH-USA or by the National Institute of Public Health in Mexico for the development of research projects.

There are also marked differences in the scientific quality of projects outputs within Latin America. As might be expected, more robust outputs and number of peer reviewed publications were associated with phase II projects. These findings may suggest that the time frame of the projects is relevant in terms of the quality of the expected products. In general, quality is improving in particular with respect to sampling methods and statistical data analysis. Still there is room for greater rigor, in particular in the incorporation of true transdisciplinarity. It is important to note that many of the projects still require outside lab support facilities, which in some cases were resolved by partnering with others, in particular with Northern institutions. However, this may have important implications on local capacity building, on outreach, follow up and the sustainability of the results of these projects. This finding also suggests more attention to linking individual and institutional partners in capacity building, since it is not sustainable to train in-country researchers to carry out research for which technical facilities and resources are not available.

In **Asia**, most of the projects visited are in their initial phases of data collection and analysis, therefore no substantial publications or outcomes have been produced yet. Almost all of the researchers claim to have established peer review mechanisms for their research results and indicate that they use national and international publication standards. The criteria used by international agencies such as WHO, FAO, TDR, among others were also mentioned as standards for their research work however it was not clear if these procedures will apply to Ecohealth funded projects within these larger efforts.

Regional Findings – Impact

The following impacts and influences, although patchy and often without substantial evidence, are worthy of reporting as indicative of the likely impacts of the PI:

In Africa, some short and medium term impacts of Ecohealth are visible and documented³⁰ at community level and at university levels. Improved health status and environmental conditions are evident in some projects areas as well as more effective and inclusive community action based on responding to local needs and solutions. The communities involved in many Ecohealth projects have not abandoned their changed practices because (it is assumed) they see tangible benefits of

²⁹ Donna Mergler, Environmental Sciences, University of Quebec, Trip Report, January 2007.

³⁰ E.g. Better sanitary infrastructure in Yaoundé Melen, improved waste management in Cotonou, better awareness of pesticide risks among cotton growers in Benin.

improved health and wellbeing from organic agriculture and improved sanitation. This in turn has reduced their vulnerability and increased their resilience.

Policy influence remains a major challenge and constraint to scaling up solutions through legal and political systems, and to the long term impact and sustainability of current efforts that rely heavily on the dedication of individual leaders and champions. Institutionalizing and sustaining the gains made in academia in West and Central Africa depends in part on CAMES accreditation which is dependent on a strong scientific record. This in turn depends on strengthening Ecohealth data analysis and scientific writing capacity as noted previously. In this regard the Review Team suggests that south-south partnerships with Latin American partners should be considered, as well as partnerships with appropriate northern institutions.

In Latin America, almost all researchers and partners expressed expectations of positive changes in the quality of life and health of the people in the scope of their projects and indicate they make every effort to achieve this. However consistent measurements or information on burden of disease for example are still lacking, as is information on improvement of ecosystems. Most of the projects visited would benefit from specific seminars and workshops on monitoring processes, tools and metrics for measuring influence and impact.

In some projects the benefits to the health of people are well recognized but not well measured or scientifically established and documented. More evidence is needed to substantiate improvements in health and environmental quality. Most of the interviewees, especially the researchers are conscious of this need. On ecosystem preservation or restoration, the evidence is even scarcer. Most of the projects tend to concentrate more on the public health implications.

While interviewing partners in Mexico some concern was expressed regarding the difficulties they experienced in negotiating Ecohealth projects with local research funding agencies because these agencies have no relevant conceptual information and experience in financing projects of the Ecohealth nature. This points to the need for greater awareness raising (such as seminars and workshops) with local research funding agencies.

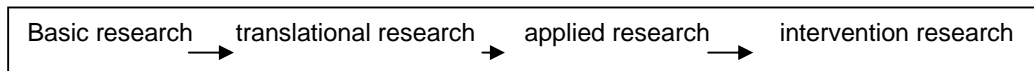
In Asia, the projects selected are in their initial data collection/analysis phases and thus difficult to assess potential or real impacts in improving the health status of the population and the ecosystems. In terms of sustainability of the network APAIR, interviewees felt that expanding the scope to other emerging diseases, and developing a funding strategy to diversifying sources of financial support were important to address, as well as supporting the rotation of leadership to improve the sense of ownership and participation from other countries. Suggestions were also made that the Steering Committee should play a large role. The national APAIR coordinators, both in Thailand and in Vietnam anticipate that the membership should and could be expanded in the near future by incorporating Laos and maybe Myanmar into the network.

Annex 7: Review of Scientific Quality of Research Outputs

This review of scientific quality of Ecohealth research products was undertaken as a component of the External Review of the IDRC Ecohealth Program Initiative. A summary of the findings is presented in the main report.

Introduction

Research is a foundational goal of the IDRC, as stated in the enabling statute. This language is important because research can encompass a range of activities, based upon its intent and purpose, and the evaluation of research products should be appropriate to the intent of the research programme. Research is commonly divided into different types of research. Many different typologies exist and we use here definitions merely for purpose to clarify the terms used. **Basic research** can be considered as experimental and theoretical work undertaken to acquire new knowledge without looking for long-term benefits other than the advancement of knowledge. **Translational research** converts scientific discoveries into practical applications (<http://nihroadmap.nih.gov/clinicalresearch/overview-translational.asp>). **Applied research** is research undertaken to solve practical problems rather than to acquire knowledge for knowledge sake. **Action research** is a methodology that combines action and research to examine specific questions, issues or phenomena through observation and reflection, and deliberate intervention to improve practice. **Evaluation research** is research conducted to measure the effectiveness or performance of a program, concept or campaign in achieving its objectives. (www.disability.wa.gov.au/Research/Definitions/ResearchTypes.htm)



For the EcoHealth program, consistent with the program prospectus and confirmed in discussions with program staff (Drs Lebel and Charron), research is positioned in the range of translational to intervention research. That is, the program intentionally does not support basic research and instead invests in research activities that (a) build upon basic research (either directly or indirectly), (b) translate the findings of research into application or policy; (c) apply findings from research to the understanding of a context-specific problem; and (d) develop policy and behavioral interventions that respond to the defined problem. This distinguishes IDRC in a fundamental way from the stated purposes of the international health grants program the National Institutes of Health (Fogarty International Center).

In our evaluation of research products of the Ecohealth programme, we used this framework in our evaluation of research products.

Value of research in Ecohealth:

Research is important to the Ecohealth program in several ways:

1. Research supports the continued development and enrichment of concepts in Ecohealth
2. Research is one yardstick for evaluating the work of the EH programme
3. Research provides a context for capacity building, in order to grow the resources and expertise for future research in EH
4. Research provides a means of recording and communicating the activities and achievements of projects within the EH portfolio
5. Research is one modality of influencing policy and behavior through demonstration of effective options or through better problem definition.

We evaluated the research of the EH programme in terms of these aims of research.

Research to support development and enrichment of concepts in EcoHealth.

In another section of this report, we comment upon the development of the EH concept, as a separate goal of the program. In this section, we evaluate the role of research in this aim. There has

been little identifiable research supported by IDRC specifically aimed at developing the field. Program staff expressed recognition of the need for such research by program staff as well as support for this work by external partners. The program provides continuing support for the international journal of Ecohealth and also for periodic meetings in ecohealth. Concept development may take place through the development of curricula and teaching materials on EH, which has happened in LAC and in West Africa. However, examination of these materials does not yield evidence of concept development. This can also occur through the analysis of lessons learned through its application in projects, and it is planned to undertake such an analysis in connection with the 2008 Ecohealth Forum to be held in Mexico in December 2008. This will require purposive planning and resources to accomplish.

Research products as means of external evaluation of the programme

Research products record the activities and achievements of the program. Moreover, publication is in itself a fundamental aspect of research. Publication in science involves the process of peer review, which requires the participation of persons outside the research team (and IDRC as well) to avoid bias. The understanding of peer review appeared to be somewhat contradictory among IDRC staff, with one person asserting that internal review by IDRC constituted "peer review." But peer reviewed publications do not constitute the entirety of the evidence base produced by research particularly in public health (see Kemm 2006 for a useful discussion of the range of relevant public materials that may be valuable for public health decision making). This body of publications – sometimes referred to as the "gray literature" – can be influential, but only if it is accessible to stakeholders.

Our work in reviewing research products was constrained by the lack of a database on these products available to us as we undertook our review. Despite earlier and repeated requests, it was only at the end of our evaluation process (early September) that we were sent a large number of research papers and other materials by program staff. In addition to requests of IDRC staff and librarians, we attempted to obtain all publications produced over the past 5 years by partners in the EH projects, in three ways: searching computer data bases for publications in any language (entering names of partners into searches through Google Scholar, PubMed and SCIELO), accessing the IDRC library and databases on each project; and by contacting participants in those projects which we visited during this evaluation. We are confident that we have obtained all the publications available through these routes, but we are now less certain that we have in fact obtained all publications. This process was therefore unsatisfactory, and we recommend that IDRC ensure an updated listing and archive of publications and other products (Conversation with Dr Charron, 8.20.08). This will enable program staff to access and evaluate such products and also facilitate the work of future evaluations. IDRC should not restrict to project reports which are not always of high scientific quality (eg. reviewed West African reports) and insist, as a quality criterion, on publication of results in international or regional scientific journals with peer review.

Relatively few publications were located through searching computer databases. Visits to projects yielded the greatest number of products, including presentations, abstracts, posters, and other materials. Publication is usually a late stage product, which can explain the lack of publications from the APAIR projects and from many of the West African projects. The maturity of the LAC projects is reflected by the highest number of peer reviewed publications in international journals and other materials.

Research as a goal of capacity building.

As indicated in the programme prospectus and other corporate materials, building capacity for research is a major objective of IDRC. Research is therefore a critical component of capacity building, and publication of research demonstrates the growth of a scientific community. The obligation to publish also works to improve research, since researchers are influenced by the quality demands of peer reviewed journals in designing and conducting their projects. Research products are also frequently necessary for IDRC partners to advance in their research careers or to obtain continuing funding for their work from sources other than IDRC. For instance, in Mexico and Brazil, publication in international scientific journals is a requirement for academic promotion and for obtaining funding from national scientific funding agencies (communication from researchers in these countries to EKS) The African Council for Academic Accreditation (CAMES) equally requires publications in international journals for academic promotion. The EH program has made relatively

little progress is building this aspect of research capacity. This is a major challenge for similar international programs as well (as indicated by discussions with peer organizations and investigators, including the Fogarty International Center, NIH). We noted that this did not seem to be a major concern among program staff, although it has been repeatedly identified as a critical area for program improvement. PI managers were not unanimous on the need for peer reviewed publication.

Obstacles to publication were identified through project interviews and noted by programme staff in Ottawa: lack of resources for preparing publications; need for training in scientific writing; low priority given by IDRC to publication as perceived by partners. IDRC could consider a more explicit priority given to publication in its solicitations for proposals, and ensuring that resources are provided to partners to assist in attaining the goals of research publication. The following statement from the EHPI management on the first draft of this report is alarming to the review team. "The PI supports research projects led by non-academics – for whom the production of science outputs is unfamiliar. In all such cases, the PI works to strengthen their capacity to achieve stronger results, since we agree that ultimately, everyone gains from publishing internationally peer-reviewed results". From the perspective of the review team the EHPI cannot achieve scientific excellence as aimed by the Prospectus if projects are not led by academics.

Research products as a means of communicating programmatic achievements

The production of research serves a purpose beyond the aims of specific products, in providing a means of transferring knowledge among partners as well as the achievements of IDRC to the larger development/research community. The relative lack of an accessible written record of research in the EH programme impacts the overall value of its investments. Several outside experts interviewed by us expressed a lack of knowledge of the EH program, because of the lack of a body of published research findings. Failure to publish also diminishes the impact of projects, since there is no accessible record of methodologies, experiences, or accomplishments for others to draw upon.

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