

Agriculture and Environment External Program Reviews:

Climate Change and Water (CCW) and, Ecosystems and Human Health (Ecohealth)

FINDINGS BRIEF

External Reviews at IDRC begin with the program analyzing its own achievements in a final prospectus report which outlines the program's strategy and evolution, significant outcomes and the main lessons from the program's experience. An external review panel consisting of three independent experts then judges the appropriateness of program implementation, the quality of research outputs, and the relevance and significance of program outcomes. The external review also identifies key issues for consideration.

This findings brief provides contextual information on the CCW and Ecohealth programs, summarizes the findings of their external reviews, and outlines issues for consideration.

The CCW review (pp. 1-4) was conducted by Cecilia Tortajada, Larry Harrington and Stephen Tyler. The Ecohealth review (pp. 5-8) was prepared by Rachel Nugent, Michael Bopp, and John Ehrenberg. The full external review reports and the programs' final prospectus reports will be made available on IDRC's website.

External review panels address four questions:

- Q1** - How did the program perform in implementing its prospectus?
- Q2** - Overall, was the quality of research supported by the program acceptable?
- Q3** - To what extent are program outcomes relevant and significant?
- Q4** - What are the key issues for IDRC's Board of Governors and senior management?

Overview of the Climate Change and Water Program (CCW)

The CCW Program is in its first prospectus period (2010- 2015) and it represents 122 active grants for a total value of \$ 75.3 million. Of this, \$ 47.6 million was allocated to new projects between April 2010 and March 2014, including \$30 million from the Government of Canada Fast-Start Finance initiative. CCW's design and start-up benefitted from the Centre's experience with the past Climate Change and Adaptation in Africa program, which generated profile in this new field and created an opening for IDRC to engage positively on climate adaptation and vulnerability concerns.

The overall objective of the CCW program is to fund research that leads to improved water quality and availability for vulnerable populations. The implicit program assumptions is that adaptation policies, plans, and actions will be strengthened with high quality and evidence-based interdisciplinary research, particularly when supported with early engagement of end users and improved coordination between stakeholders.

The program's strategy built on existing projects and partners, with a focus on water availability and adaptive capacity, and on identification and implementation of practical adaptation measures. It emphasized interdisciplinary approaches that integrate climate and water science with social and economic development issues, including vulnerability assessment, gender and social analysis, participatory geographic information systems, and economic analysis.

The CCW prospectus noted that the program would need to "remain flexible enough to modify some aspects of its programming to be able to respond to emerging issues." Significant factors that influenced shifts during implementation included a strategic decision to move away from the elusive climate concept of "adaptive capacity" to focus on emergent key priorities; the incorporation into the CCW program of an additional \$30 million in "fast start" grants in response to a contribution by the Government of Canada in 2010 as part of Canada's commitment under the Copenhagen Accord; and a decision by the program to revise research themes to cover important research gaps

Highlights of CCW's accomplishments

The Climate Change and Water program demonstrated substantial nimbleness in response to the unforeseen Government of Canada Fast-Start Finance partnership which represented a high-pressure opportunity with the challenge of delivering results quickly. The Climate Change and Water program's performance on the Fast-Start projects demonstrated IDRC's value to the Government of Canada and positioned the Centre to be a partner of choice for the Government future efforts to support adaptation and reduce vulnerability to climate change in developing regions.

Several CCW projects brought researchers, communities and decision makers to discuss better management of water resources, and developing adaptive strategies for the future. In some cases the problem is primarily climate change, for example 30% decrease in rainfall in the Maipo basin around Santiago de Chile. In others, climate change is a contributing factor complicating other issues, such as heavy domestic, agricultural, and industrial water use in India's Arkavathy River Basin that supplies Bangalore.

The program promoted improved methods for adaptation research, such inter-disciplinarity, vulnerability assessments, and economic methods to assess adaptation. The program also supported the scale-up of water conservation technologies in Burkina Faso. Over 100 adaptation strategies have been identified and catalogued. The impact of these was seen in how CCW helped meet the demand for practical solutions, for example, an integrated coastal management policy to protect at-risk, low-lying slums in Cape Town and plans for dealing with sea-level rise in Egypt's national strategy on adaptation and disaster risk reduction.

Summary of CCW External Review Findings

The panel found that the CCW program was developed and implemented in a challenging and relatively high risk context, amidst high expectations. The program has been successful in a field with few standard methodologies, limited developing country research capacity, demanding interdisciplinary approaches, and poorly defined public policy targets. During the period under review, CCW has developed improved tools and methods in its various areas of work. Many projects demonstrated positive momentum for substantial and growing policy influence, although these results are still maturing and have not yet been well documented.

Q1 - How did the program perform in implementing its prospectus?

The program implemented its prospectus in a coherent and consistent way. The program made reasonable choices in programming and managed risks appropriately. Shifts in strategy were well-documented and justified in context. The program successfully capitalized on opportunities, particularly in its nimble response to Fast Start funding from Environment Canada. This built strong relations and profile with that agency, and leveraged external funds effectively to support prospectus implementation.

The panel noted that implementation strategy could be improved by transferring learning from the project to the program-level. The impact of the IDRC programs goes beyond a prospectus period. Although the CCW program invested in synthesis, learning and sharing among related projects, the panel concluded that lessons did not translate into shared programming insights. The program's critical reflection and internal learning could be more effective if understood as part of a process that goes beyond a five-year period.

Q2 - Overall, was the quality of research supported by the program acceptable?

Research quality was assessed according to four pre-determined and defined dimensions: *Research integrity* (methodological rigour), *research legitimacy* (research designed to address potentially negative consequences and outcomes for research participants and for affected populations including research ethics, gender responsiveness, inclusiveness of vulnerable populations, and engagement with local knowledge), *research importance* (originality and relevance), and *positioning for use* (timeliness and actionability of research).

Overall, the panel found that the quality of the research being supported by CCW is good. Approximately three quarters of the projects reviewed satisfied IDRC research quality criteria. Of the projects reviewed, those launched within the 2010-2015 period were judged as acceptable and good, while projects inherited from past programs were distributed across all categories (unacceptable, less than acceptable, acceptable/good, and very good).

Across the sampled projects, the panel found high performance on research integrity and research importance; and lower but acceptable performance in positioning for use and in research legitimacy. The panel found that these low scores for addressing negative consequences, including gender responsiveness and ethics suggested that these areas were not fully addressed in projects apart from those with a specific focus on gender and social issues. Other key influences that were deemed to have negatively impacted research quality included hastiness in project selection and underutilization of monitoring tools.

The panel found a positive correlation between capacity strengthening efforts and research quality, which might indicate that capacity building activities are paying off and generating higher quality research.

Q3 - To what extent are program outcomes relevant and significant?

CCW's Final Prospectus Report presented examples with positive results in three program outcome areas: research to increase availability of water and enable adaptation; capacity building for researchers; and communication of results and policy influence. On the whole, project-level outcomes were reported fairly and accurately. The panel used different sources of information to verify the reported outcomes and contributions and the overall assessment of program performance was good.

Interviews with program staff suggest that progress on some outcomes such as decision maker engagement and near-term influence on policy and practice is in many cases far more advanced than what is reported in the project documentation. This is because available documentation for some projects is out-dated or incomplete.

On balance, early results in the three outcome areas are significant and positive and met the expectations of the panelists. The examples given under the three outcomes were highly relevant to the development priorities and research challenges relating to water utilization and climate change. Outcomes responded to priorities at multiple scales and appropriately balanced rural, urban and coastal issues.

Many of the reviewed projects showed positive momentum for substantial and growing policy influence over time. An external survey undertaken by the panel found a high level of confidence among project leaders in achieving significant impact in the near term. Recent outcomes from communication of results and policy influence are still materializing and have yet to be well documented.

Q4 - What are the key issues for IDRC's Board of Governors and senior management?

Programmatic learning: The panel raised the importance of ongoing program learning as a central, iterative process to consider and reinforce as the CCW program continues to evolve.

Innovation trajectories, and influence and continuity strategies: The panel noted that IDRC's value proposition lies in the effectiveness with which it can deliver momentum along an innovation trajectory from conception to improved policy and practice. The best way to increase the likelihood that past CCW investments will produce future value is to overtly plan for influence and continuity strategies. While the concept of research trajectories is well known to the Centre, efforts to clearly articulate this into program strategies could help IDRC maintain momentum as it moves research into use for policy and practice change over the medium and long term.

Overview of the Ecosystems and Human Health (Ecohealth) Program

The Ecohealth program for 2010-2015 represented 107 active grants for a total value \$85 million. Of this, \$33.4 million was allocated to new projects between April 2010 and March 2014. With its current prospectus, the program concluded a fourth phase of programming, completing 18 years of research support on the links between the environment and human health. During this time, Ecohealth has sought to promote a trans-disciplinary, gender-sensitive, and participatory approach to conducting research at the intersection of health, environment, and social development.

The Ecohealth program focuses on discovering means to better manage resources in order to improve the health and livelihoods of poor people in low and middle-income countries. The program has evolved from mixed teams of northern and southern-based researchers piloting research in local contexts, to establishing networks of southern researchers and building southern leadership for broader field development.

Ecohealth has explored a broad range of research topics including how development processes lead to environmental degradation, potential risks to human health, mining, agricultural intensification, urbanization, occupational health in small and medium enterprises, effects of climate change, and zoonotic and communicable diseases. In its prospectus, the program made Ecohealth field-building its paramount goal along with knowledge-building in the two thematic areas of (re-)emerging infectious diseases and agriculture and health.

Highlights of Ecohealth's accomplishments

The program generated strong results in its field-building strategy, noting in particular the strength of institutions and networks in Latin America and Canada, mainstreaming of ecohealth into programs in many universities, and clear evidence of substantial IDRC influence on programs and strategies of other donors and international organizations

(Special Programme for Research and Training in Tropical Diseases (TDR) at the World Health Organization (WHO), the US National Institutes of Health (NIH), and the UK's Ecosystem Services for Poverty Alleviation Program).

Several projects, some newer, and some longer-term investments, demonstrated large-scale uptake of findings. For example, more than 26,600 people in 30 communities in 3 Central American countries were protected from Chagas disease transmission due to the implementation of environmentally and socially sustainable housing improvements, combined with community education and health promotion; interventions were taken up by national and regional programs, with the support of other donors. In Malawi, through a project recognized by United Nations Special Rapporteur on the Right to Food, 7,000 families now benefit from improved legume crops and dietary diversity, nutritional education, and seed-banks. Nutritional status and growth improved significantly in 4,000 children. In Thailand, a project addressed a common food-borne parasite (the liver fluke) associated with liver cancer. The project combined human and veterinary treatment programs, community health education, and environmental control of the vector snail. The result was a 50% reduction in infection rates and the virtual elimination of the parasite from the fish, the main source of infection for villagers. The project was awarded funding from the Gates Foundation Grand Challenges and the Thai government for scale-up to the rest of Thailand and other countries. In Peru, a project helped change irrigation practices and cut malaria-transmitting mosquito populations by 90%, decreased water use by 30 to 60%, decreased the use of agrochemicals by 30%, and increased rice yields by 25% with significant economic savings to small rice producers. The approach (intermittent irrigation of rice) is being implemented in neighbouring jurisdictions, and enshrined in state legislation for the control of malaria.

Summary of Ecohealth External Review Findings

The panel found that the program's field-building goals were highly ambitious. After nearly two decades as a key player in the field, the Ecohealth program sought to build stronger and more widespread leadership in the south and shift IDRC's central role in the evolution and sustainability of Ecohealth, to one of devolution to multiple supporting actors. It did so in a context of relatively high risk, given the challenging political and governance conditions in all three regions of focus (Asia, Latin America and Caribbean LAC, and Africa), and disparities in capacities for research and implementation across countries and continents.

EcoHealth fills a unique niche in the development space, addressing multifactorial problems that require multi-sectoral solutions. With the current Ecohealth prospectus, IDRC has defined a path. In many ways, the programs' achievements exceed its aspirations, although work remains to be done to realize a self-perpetuating EcoHealth field.

Q1 - How did the program perform in implementing its prospectus?

The panel found that the prospectus was effectively implemented in a challenging operating environment. The main objectives were successfully achieved, with strong results in filling

knowledge gaps in Asia and LAC and very promising results in field-building. Program decisions to customize and adapt field-building arrangements to regional settings were reasonable.

To maintain focus on the field-building goal, the planned emphasis on specific areas (e.g. Middle-East, Gender) was cancelled and the panel found this as a key decision. The review also noted the need to increase and strengthen partnerships with other funders and global organizations as this is a work in progress that will require continued relationship-building and sustained support.

The challenges of stepping out of a leadership role after eighteen years carrying the Ecohealth banner are not to be underestimated, especially when this is happening simultaneously in three regions and globally. The panelists noted that the program has done an admirable job of preparing for this shift, but given the complexity of the Ecohealth problematique, it is not surprising that some devolution goals are still a work in progress.

Q2 - Overall, was the quality of research supported by the program acceptable?

Research quality was assessed according to four dimensions: *Research integrity, research legitimacy, research importance, and positioning for use*. The success of Ecohealth research projects was evaluated with consideration of the difficulties of supporting multi- and interdisciplinary work. The panel judged the majority (77%) of the projects reviewed to be of good or very good quality. This is a highly commendable result for any program, but especially for one focused on shifting leadership of the field to southern researchers. The panelists considered this overall high performance to be a very positive indication of the strength and emerging success of field-building efforts.

Concerning areas to improve in research quality, there were a considerable number of projects that fail to produce peer-reviewed publications. At the level of the entire portfolio, of 64 Research Projects, less than half (46.9%) had published at least one peer-reviewed article at the time of this assessment. In the reviewers' professional view, projects can be reasonably expected to have at least one publication in press after the second year.

The panel found instances where Ecohealth projects could have given more attention to ethical reviews or gender considerations. It is however of note that the panel's report acknowledges and applauds IDRC's recent efforts to improve Centre-wide ethics protocols towards ensuring compliance with accepted standards.

Q3 - To what extent are program outcomes relevant and significant?

The panel assessed the program's performance in the two main outcome areas targeted in this prospectus. 1) Ecohealth field-building and 2) filling knowledge gaps in agriculture and health and emerging and re-emerging infectious diseases.

Overall, the panel found that significant progress has been made in establishing and building the Ecohealth field globally. The program was nuanced in adapting field-building strategies to regional strengths and realities. Approximately a third of sampled projects could be called “star” projects in that they scored well in research quality and were also successful (or likely to be so) in linking solid research to effective policy and practice influence. The panel found this as a very significant achievement for EcoHealth given what is required for success in terms of policy and practice influence. Further assessment of why these projects were effective could contribute significantly to future research and development achievements.

Many training courses and programs emerged in the reviewed Ecohealth prospectus period but there is no evidence of training effectiveness assessment in terms of the capacity of the graduates do effective ecohealth research or to contribute to future leadership of field.

With regard to knowledge-building in its specific thematic areas, the panel found a significant number of successful examples of research in its three areas of focus: Asia, LAC and Africa. Similarly, the panel noted that a significant number of modules, courses and training programs have emerged from Ecohealth’s efforts.

Similarly, the panel also found significant number of successful examples of research filling knowledge gaps in all three regions (such as avian flu, liver fluke and dengue in Asia; dengue, malaria and Chagas in LAC; and nutrition and agriculture in Africa).

Q4 - What are the key issues for IDRC’s Board of Governors and senior management?

Learning: Consider lessons learned in this and earlier Ecohealth prospectuses for new IDRC priorities such as food security, nutrition, Ebola, and non-communicable diseases, for which Ecohealth offers valuable solutions. What has been accomplished in these 18 years establishes a strong foundation to strengthen work on these and other health and environmental issues.

Reflection and Translation: The Ecohealth program has demonstrated the feasibility of transdisciplinary research and has enabled and empowered others. However, further effort and time is needed to fully understand and translate this success in order to develop guidance to current and future EcoHealth researchers.

Acknowledgment (Branding) of IDRC’s Role: While there is little doubt that IDRC “punches above its weight,” there is insufficient acknowledgment in the external environment of its contributions in developing and pursuing Ecohealth as a field of research and practice. Other development and research funders have large footprints, but IDRC’s mark should be right alongside theirs.