



Executive summary

COMMUNITY OF PRACTICE IN ECOHEALTH – DISSEMINATION AND INSTITUTIONALIZATION FOR RESEARCH, OUTREACH AND POLICY INFLUENCE IN LATIN AMERICA AND THE CARIBBEAN (COPEH-LAC) Phase II

Project number: 052237

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1. The history of CoPEH-LAC

The Ecosystem Approach to Human Health, as theoretical and methodological reference, provides a holistic and transdisciplinary approach to examine multiple sources, pathways and effects considering the confluence of cultural, political, socioeconomic, and gender. A group of professionals working in the field of health, society and environment saw this approach as an interesting concept to deepen, apply and disseminate their knowledge at a regional level in Latin America and the Caribbean. In late 2005, they succeeded to obtain IDRC funding to support their activities; the Community of Practice in Ecosystem Approaches to Human Health in Latin America and the Caribbean (LAC CoPEHs, for its acronym in English) was born.

The experience of the first phase, which was characterized by the progressive construction of research capacities in Ecosystem Approaches to Human Health in the LAC region, resulted in the construction of a Community of Practice with members in 17 countries.

This successful stage of building and strengthening CoPEH-LACs allowed us to begin the second phase comprised from 2009 to 2013. In this second phase, CoPEHs-LAC has generated recognition to other institutions and agencies worldwide who share the vision to understand the nexus of health, society and ecosystems and address the complex problems facing the world today. Currently, members of CoPEH-LAC coordinate activities with these international organizations, including the Pan American Health Organization (PAHO), the Research Institute for Development (IRD-France) and the Association for Ecology and Health and CoPEH Canada. They also continue their work with CoPEH COIN. These collaborations allow the promotion of the ecosystem approach to human health on a global level. Furthermore, a proposal has been formulated for a collaborative Pan-American CoPEH on Ecosystem Health Approaches to strengthen research, policy and practice at the intersection of health, ecosystems and society.

A key moment for the start of Phase II was the General Assembly meeting of CoPEH-LAC held in Mérida, Mexico in 2008. During this meeting, that brought together 61 people from Latin America, the Caribbean and Canada, the content of CoPEH-LAC Phase II was defined jointly, and main work lines were established.

Another key moment was the initial planning workshop held in Quito, Ecuador in June 2009, during which a strategic plan was developed (2009 – 2015), which guided the work lines of the Community. During this meeting, the original objectives of the CoPEH-LAC phase II proposal were revised and incorporated into this strategic plan.

(http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=select&id=2)

2. Vision, mission and strategic objectives

Vision

During the second phase, members of CoPEH-LAC formulated the following vision:

"The populations of Latin America and the Caribbean exercise their full right to health and to protect the environment, with freedom, equity and justice."

By CoPEH-LAC global pollution is seen as a collective health problem and that this contamination occurs through complex ways that cannot be studied by traditional methods.

Mission

The following mission was formulated:

Contribute with relevant knowledge, capacity building and exchange of experiences to the transformation of social, economic and environmental issues that affect populations' health, becoming a recognized partner by political leaders, academics and members of civil society with respect to EcoHealth in the region.

Strategic objectives

In fulfillment of its vision, CoPEH-LAC focuses its efforts on three main strategic objectives (SO):

1. To develop knowledge and skills in EcoHealth, through training and technical assistance of sustained quality, continuous dissemination and the creation of academic, social and political alliances;
2. To develop the Community of Practice in EcoHealth and diversify its resources;
3. To promote models of sustainable production and subsistence with an ecosystem health approach.

Structure of CoPEH-LAC

One reason for success of the CoPEH-LAC was its organizational structure, allowing a community that grows gradually with a current presence in 16 Latin American and the Caribbean and Quebec, Canada. This structure allowed application of our principles of sharing, feedback and multilateral support. The Centers of Excellence located in five regions of Latin America and the Caribbean and Quebec, Canada, coordinated activities as a group (Figure 1).

Each region (called node) used its strengths in research, teaching and policy. The organizational figure allowed linkage of those strengths and feedback to existing experiences in each region, just as was expected by the group that started CoPEH-LAC and embodied in the figure of the 'Flower' their understanding and vision of what would be their Community of Practice.

http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=fileinfo&id=596).

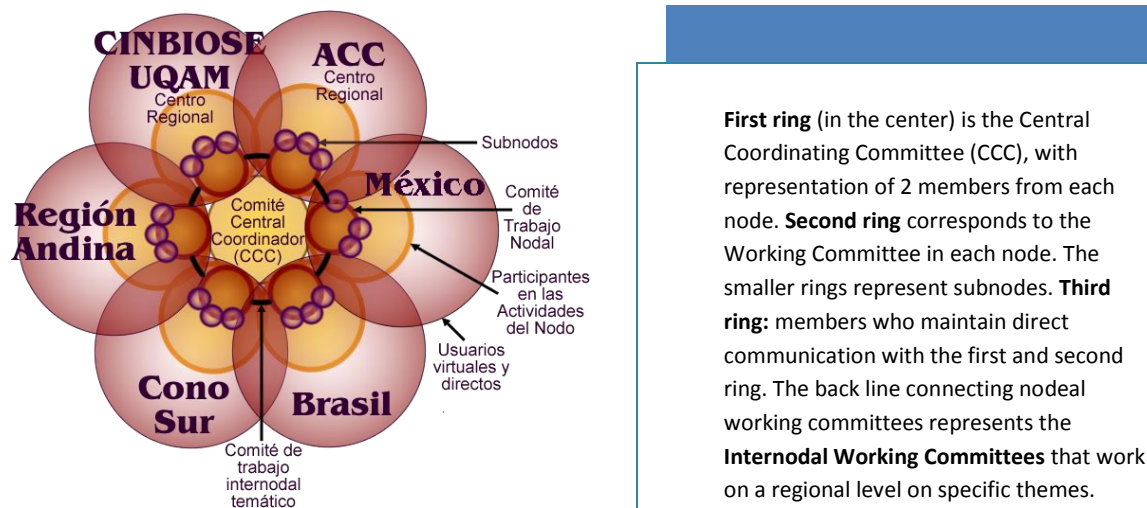


Figure 1: The 'flower' structure of CoPEH-LAC

Part of the success of CoPEHs-LAC is due to this nodal structure that enables participation, learning and sharing of knowledge, practices and support. Such decentralized structure has allowed each node to maintain its autonomy but at the same time favored horizontal communication:

"The integration of cultural, historical and territorial affinities allowed better exchange. Recognizing and respecting other nodes, each one with its own peculiarities, enriched CoPEH-LAC and streamlined the management of financial resources." (Andean Node)

3. Evaluation COPEH network LAC

The experience of working as a Community of Practice has been evaluated using Social Network Analysis (SNA). Since 2006, it has been used to evaluate the development of the Community internally and to understand the structure of the network of CoPEH-LAC. We evaluated the number of contacts and collaborations that have arisen between persons during the existence of the COPEH-LAC, both at a nodal and regional level.

This assessment has included a longitudinal quantitative analysis of the CoPEH-network. In order to gain a better understanding of changes in the community, this information was supplemented with interviews and open-ended questionnaires. After obtaining the network assessment at the end of the

first phase, an evaluation was conducted in the second phase. In April 2011, a questionnaire was sent to 120 people to map relationships with members of CoPEH-LAC that were built during the second phase. (http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=fileinfo&id=559)

"The overall objective of this internal evaluation is to allow members to have an overview of their community and, most importantly, to enable them to promote transdisciplinarity and relationships between nodes. Therefore, these results have been presented to the members at the annual meetings and during meetings of the CCC "(Node Members CINBIOSE).

The results of this analysis have been incorporated into a written report developed by the Quebec Node. The results of the SNA indicate that **CoPEH-LAC was strengthened between 2007 and 2011**. An analysis that simulates 'loosing' most central and intermediate members of our CoPEH, shows that the community still remains a connected entity (see Figure 2).

Because in Phase 2 we also wanted "a robust community of practice that can function well with no over-dependence on any particular member or set of members," we purposefully removed from the analysis the most central and intermediary¹ members in the network to illustrate the augmentation of resilience between 2007 and 2011.

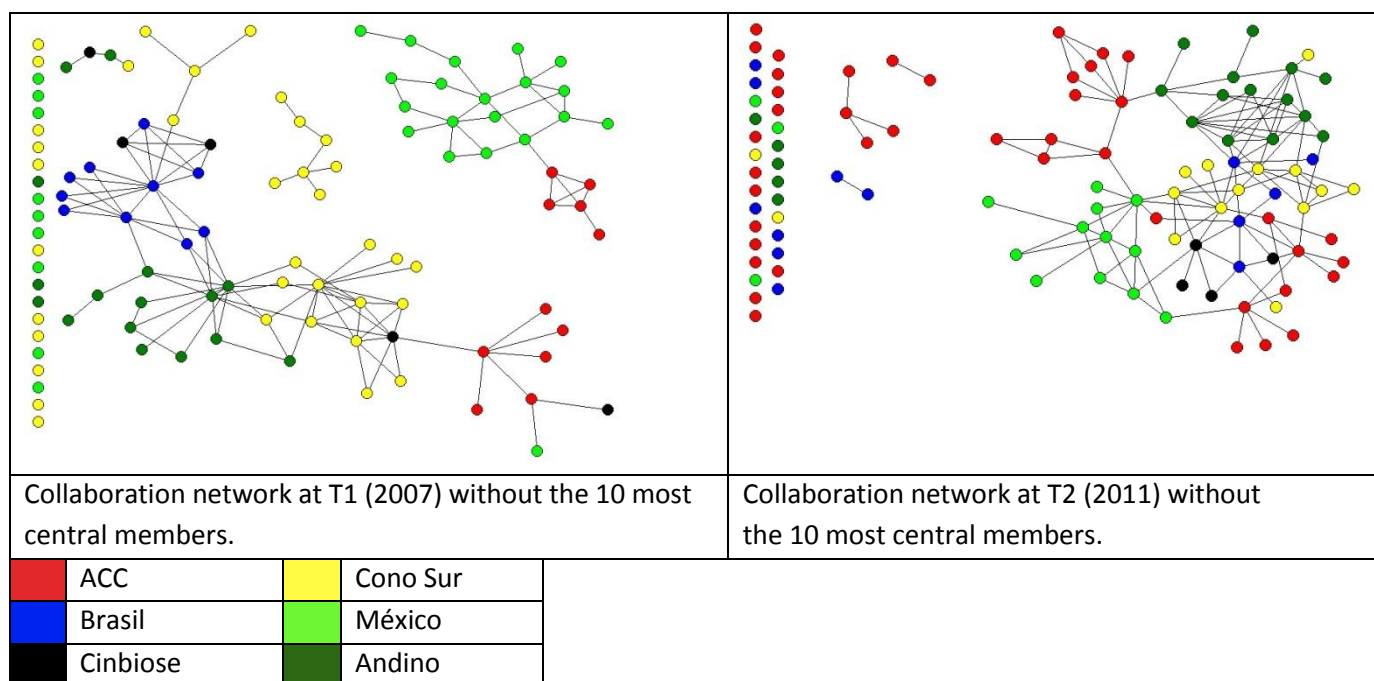


Figure 2a – Collaboration network at T1 and T2 without the 10 most central members

¹ The degree centrality and betweenness are different ways to measure the centrality of a person in a network. Those most central in terms of degree centrality in a network are more involved in direct relationships than others. Those most intermediate (betweenness) in the network connect individuals or groups of individuals who are not directly connected.

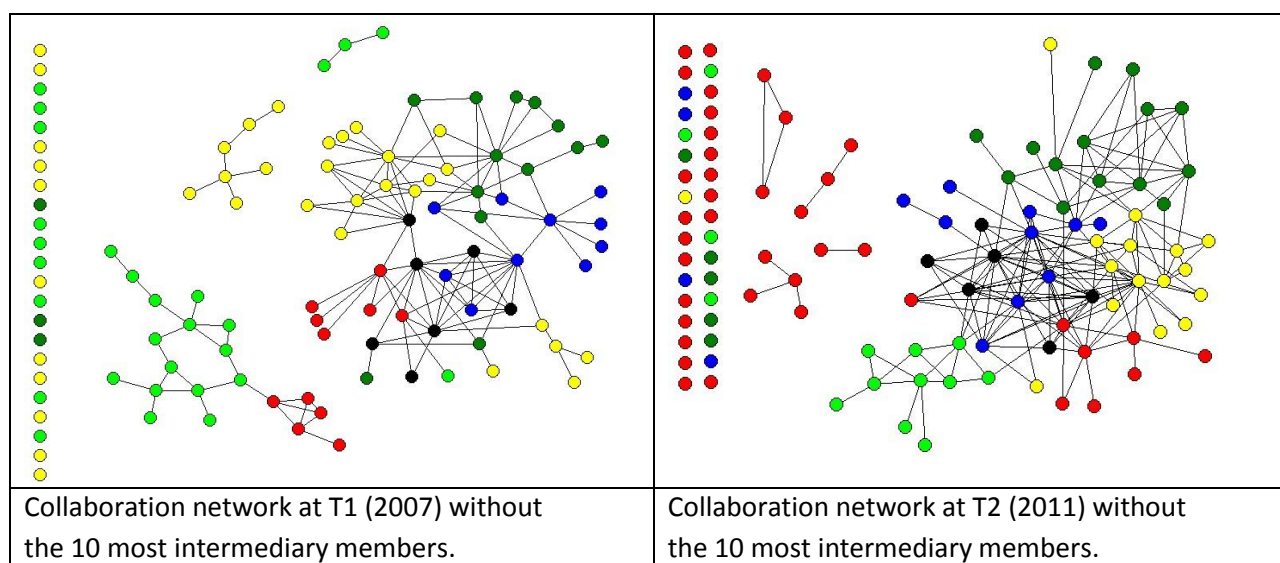


Figure 2b – Collaboration network at T1 and T2 without the 10 most intermediary members

Furthermore, the results show that CoPEH-LAC is a decentralized network, which indicates that local leadership is emerging. This reflects the democratic organization of the CoPEH-LAC, where autonomy is combined with the freedom to take initiative and being recognized for this. The SNA also shows that CoPEH-LAC has favored the development of cross-cutting relationships. The network analysis of CoPEH-LAC continues, and includes the verification of hypotheses based on qualitative results in phase 1. One of them is that "relations of trust play an important role in the development of collaborations in a community of practice such as CoPEHs-LAC (Saint-Charles Pelletier & Rioux, 2013).

4. Key results for strategic objective (SO) 1: 'To develop knowledge and skills in Ecohealth'

4.1. Result 1: Training and technical assistance of sustained quality

In the category of training and sustained quality technical assistance can be mentioned as main results:

- Modules with an EcoHealth Approach applied at graduate level (n=4) undergraduate level (n=2);
- Courses on EcoHealth applied at graduate (n=5) and undergraduate (n=1) level;
- Integration of ecohealth contents in 20 postgraduate courses/modules and in 12 undergraduate courses/modules;
- 7 courses with classes on Approach;
- 13 courses-workshops for community leaders;
- Mapping of initiatives in Environment and Health (opportunities to incorporate Ecohealth in university curricula (Chile); Mapping of projects that incorporate gender issues.

- 26 exchanges of professors and researchers to promote inter nodal cooperation
- 15 training workshops on EcoHealth approach;
- 10 workshops / training courses on specific topics not directly on the approach, but on methodologies and tools applied to projects;
- 10 masters' and doctoral thesis related to the ecosystem approach to human health.

4.2. Result 2: Permanent dissemination and scientific application

- 59 participations in conferences and congresses locally and internationally;
- Web-site creation www.una.ac.cr/copehlac with a digital repository accessible to 100% of the members of CoPEHs-LAC (more than 200 documents are stored).
- 9 publications by CoPEHLAC members on Ecosystem Approaches to Human Health.
- 24 publications that elements of the Ecosystem Approach to Human Health and are published in recognized regional and international journals.
- 9 non-scientific publications on Ecohealth-related themes.
- 41 research projects in which CoPEH-LAC members have incorporated the Ecosystem Approach to Human Health.

4.3. Result 3: The construction and consolidation of academic, social and political alliances

CoPEHs-LAC has established partnerships that have allowed dissemination, learning and practice of Ecosystem Approaches to Human Health at both regional and nodal level. These partnerships have formed an opportunity for CoPEH-LAC with respect to, for example, inclusion of Ecohealth approaches into academic programs for undergraduate and graduate students, and members of civil society. The partnerships also allowed development and strengthening of links with ministries, and the inclusion of Ecohealth into projects performed by professionals of governmental organizations and civil society. The strengthening of our CoPEH-LAC through new partnerships and members is an important result with respect to the development of CoPEH-LAC.

Partnerships are established at international level as well as on a nodal level; in this moment, 6 international and 31 nodal alliances exist (see 5.5).

5. Outputs for SO1: 'Develop knowledge and skills in Ecosalud'

5.1. Output 1: Course-workshop for community leaders

At a regional level a course-workshop (40 hours) for community leaders was designed, and validated in different nodes CoPEHs-LAC. The application of this course in five nodes, has allowed a construction of knowledge and learning about the context and socio-environmental health of populations in different LAC-realities in Mexico, Central America and the Caribbean (ACC), Andean region, Brazil and Southern Cone. The course allowed us to connect with groups of leaders and to strengthen their knowledge of ecohealth approaches. The former, to strengthen their leadership within the context of existing projects, and applied to a specific theme of their concern.

5.2. Output 2: Advanced Edition conceptual book

Advanced editing of a conceptual book about ecosystem health approaches organized around 20 chapters, including specific issues EcoHealth approach, brings with new reflections on general systems theory and complexity theory. This book will provide a contribution to new thinking on the general theory of systems and complexity theories; includes important topics rarely discussed in other writings on the approach, in relation to working conditions and health within an economic vision systemic. It includes topics that have emerged in this field, a variety of epistemological positions, such as referring to the relationship of nature with the human, community participation and gender theories. Another peculiarity of this work is to be included in this editorial work colleagues from institutions with which the COPEH-LAC seeks to strengthen alliances (eg, PAHO / WHO).

5.3. Output 3: Website and query repository

The website www.una.ac.cr/copehlac is a means of consultation for CoPEHs LAC members, and has ensured storage and dissemination of announcements, realized activities, results, and products.

5.4. Output 4: Publications

9 scientific and 9 popular publications on Ecosystem Approaches to Human Health, and 24 scientific publications including Ecosalud aspects.

5.5. Output 5: 37 Partnerships have been established

Six regional partnerships are:

- **Research Institute for Development (IRD-France).** CoPEH-LAC has signed an agreement document for scientific and technical cooperation with IRD. This cooperation led to the co-organization of the

Congress on metals in Oruro, Bolivia from 13 to 15 October 2010. In June 2013, a joint workshop will be held on metals, environment and health with an ecosystem approach to be in Bolivia. This activity aims to promote and strengthen links between researchers from IRD and CoPEHs-LAC in the field of EcoHealth.

- **Pan American Health Organization (PAHO).** CoPEHs LAC has initiated a communication with PAHO, through the participation of Dr. Ana Riviere Cinnamond (Advisor, Eco-Health Regional Technical Team on Water and Sanitation (ETRAS) PAHO / WHO) in the General Assembly CoPEHs LAC (Arequipa, Peru 2012) and subsequently became a CoPEH-LAC member. The planning of a virtual learning module on EESH designed for PAHO-WHO has started. On the other hand, three centers of excellence CoPEH-LAC (INSP, IRET, CINBIOSE) are collaborating centers PAHO-WHO. The environmental health collaborating centers (INSP, CINBIOSE) have promoted the incorporation of EESH into working themes of PAHO-WHO. THE IRET is making efforts to extend its role as a collaborator towards the environmental health field.
- **Project 'Leadership in ecohealth for vector-borne diseases in LAC'.** The National Public Health Institute, Mexico (INSP) has the overall coordination of this project. Members of COPEH-LAC participate as co-investigators in the project, together with representatives from five additional institutions. The Andean Node coordinates the knowledge management and organizational performance component of the project. Members of the Brazilian node lead the social network analysis of the persons who participate in this project. CoPEH-LAC has played a crucial role with respect to the incorporation of EESH in this project and has played a major role in the training workshops.
- **Society for Environmental Epidemiology (ISEE).** In September 2011, during the ISEE Congress held in Barcelona, Spain, members of CoPEH-LAC linked with the working group 'The Latin-American chapter of ISEE', led by Fabian Mendez from Colombia. After the meeting, Fabian became a CoPEH-LAC member and participated in the General Assembly Meeting in Peru, 2012. The development of an Agenda on environmental epidemiology in LAC, including Ecohealth concepts has started.
- **EcoHealth - International Association for Ecology and Health (IAEH).** CoPEH Members form part of the board of IAEH and the Editorial Committee the journal Ecohealth. The proposal "Consolidation and Expansion of the International Association for Ecology & Health and EcoHealth Journal activities" (2011-2014), is coordinated by Carlos Passos, co-coordinator of CoPEH-LAC's Brazilian's node. CoPEHs-LAC has (co-) organized several sessions and workshops at conferences organized by the IAEH. Discussions are ongoing with AIEH with respect to CoPEH-LAC becoming the Latin American chapter of IAEH.
- **CoPEH Canada.** In all summer courses organized annually by CoPEH-Canada, Members of CoPEH-LAC have participated as teachers. In addition, several new collaborations have been established between researchers from CoPEH-Canada and CoPEH-LAC. In addition to the existing link with Quebec (CINBIOSE), the collaboration was extended to researcher from other universities, such as the University of Moncton, York, and other nodes, such as the University of Toronto. Lately, there has been a proposal to IDRC to strengthen collaboration between CoPEH-LAC and CoPEH-Canada.

The purpose of this project is to leverage existing strengths in theoretical and practical applications of ecosystem approaches to health among colleagues in Canada, Latin America and the Caribbean (LAC), to better implement these approaches in response to health challenges and environment in the Americas.

Thirty-one partnerships at nodal levels: 23 ACADEMIC PARTNERSHIPS

Mexican node (10 partnerships)

- Regional Centre for Public Health Research. Tapachula, Mexico. Members currently node Mexico develop teaching activities at various universities in the country where activities are being developed in order to include the EcoHealth approach.
- National Institute for Public Health (INSP) Cuernavaca, Mexico. Since 2009, INSP researchers and teachers contribute to the development of EcoHealth approach. INSP members have incorporated Ecosystem Approach to Human Health in their work.
- Research unit with EcoHealth approach, Autonomous University of México.
- CoPEH members from the Mexican node develop teaching activities at various universities and include EcoHealth approaches in their curricula: (a) Autonomous University of Baja California, Mexico; (b) Autonomous University of Chihuahua, Mexico; (c) Autonomous University of Guerrero, Mexico; (d) Autonomous University of San Luis Potosi, Mexico; (e) Autonomous University of Yucatan, Mexico; (f) Autonomous University of Mexico State, Mexico, and; (g) University of Guadalajara, Mexico.

Node ACC (9 partnerships)

- Research Center of Health Sciences (CICS), University of San Carlos de Guatemala (USAC), Guatemala. Since 2006, various researchers have formed part of CoPEH-LAC. In 2009 a training workshop was facilitated in which many persons of CICS participated, and some additional persons from several faculties of USAC. In 2012, CICS included Ecohealth research in their development plan for the next 10 years. On the Board of USAC, funding for projects with and Ecohealth approach has been proposed.
- School of Public Health at the University of Costa Rica, Costa Rica. The School has facilitated the incorporation of Ecohealth in courses and programs. Also the Dean of the Faculty has expressed interest in incorporating the approach in academic teaching and research. A joint course, has been proposed with IRET-UNA (Nodal (ACC) and Regional Coordination of CoPEH-LAC)
- School of Health Technology, Environmental Health career at the University of Costa Rica, Costa Rica. The School of Health Technology has shown interest in the ecosystem approach to human health and has incorporated Ecohealth in courses and programs of the career Environmental Health.

- Development Observatory of the University of Costa Rica, Costa Rica. Members of the Costa Rica sub node participate in CoPEH-LAC activities of formation, learning and sharing of methodologies that are applied in projects of the Observatory.
- Health Work and Environment Program in Central America (SALTRA) of the National University of Costa Rica. Collaborations with SALTRA are visualized through the integration of SALTRA members in the Costa Rica sub node. CoPEH-LAC established a partnership linked with the SALTRA Community of Practice in Health, Work and Environment, in which also other institutions of Central America participate. Ecohealth Approaches are planned to be included in teaching modules and research projects.
- Master of Environmental Management, Higher Institute of Technologies and Applied Sciences, Cuba. Since 2009 an accreditation process has started in which Ecohealth was incorporated. In 2012, researchers and teachers of the Cuban sub node reaffirmed the interest to continue learning, teaching and incorporating Ecohealth in their research projects and teaching activities.
- National Autonomous University of Nicaragua (UNAN-León), School of Medicine. A process has initiated to integrate Ecohealth in several modules: Epidemiology, Public Health, New Paradigms to Health, and in the transversal axis of research.
- Ngäbe-Buklé University (UNGB) of Panama. This partnership started in February 2010 with a teacher training workshop on Ecosystem Approaches to Human Health, who afterwards started to incorporate ecohealth in their teaching. In 2012 the Rector of the University coached the transversal CoPEH-LAC group on curriculum development.
- Masters in Environmental Health Engineering del 'Instituto Tecnológico de Santo Domingo (INTEC)' Dominican Republic.

Andean Node (two partnerships)

- Environmental Sustainability Centre of Cayetano Heredia, Peru. During 2011, meetings began to perform summer courses together with COPEH-LAC. The coordinator of this center became a CoPEH-LACV member. <http://www.csa-upch.edu.pe/>
- Universidad Mayor San Andrés de Bolivia, UMSA. Consolidation of inter-institutional partnerships

Brazilian Node (3 alliances)

- UNB Faculty Planaltina Brazil. Incorporation of EcoHealth approach in undergraduate courses, masters and doctoral programs.
- Institute of Biophysics Carlos Chagas Filho, Brazil. Opportunity to introduce EcoHealth approaches into undergraduate courses, masters, and doctorate programs.

- Graduate Program in Sustainability and Environmental Sciences in the Amazon (PPG-CASA). There is an association between the Graduate Program in Sustainable Development of the Universidade de Brasília, Universidade Federal do Amazonas and CoPEH-LAC. As part of this partnership Carlos Passos and Frédéric Mertens (Brazilian Node) form part of the academic activities of the Program.

O 4 ALLIANCES WITH DECISION MAKERS

- Coordination of joint activities with the **Environmental Health section of the Ministry of Health of Brazil**. Representatives of the Brazilian node work to strengthen the linkages with health institutions of the states (municipalities) that require training in the EcoHealth approach in the regions of Tocantins and the Amazons, Brazil.
- **Ministry of Social Participation, Ecuador**. CoPEH-LAC members of the Andean node have performed training on EcoHealth approaches to technicians of the Ministry of Social Participation. These technicians work with communities affected by extractive industries (mining, oil, hydroelectric) in different parts of Ecuador. Guido Teran is a member of CoPEH-LAC and deputy minister, and has shown interest in disseminating theoretical and methodological principles of comprehensiveness, the trans-disciplinarity and community participation in governmental organizations.
- **Network of Municipalities for Health, Mexico**. CoPEH-LAC members support the Network of Municipalities for Health that has established links with people who are interested in applying Ecohealth Approaches. It is expected that the network will be extended to five other municipalities.
- **Superintendent of Labor Risks, Buenos Aires. Argentina**. Members of the Argentina sub-node propose incorporating the approach into activities performed by this governmental agency, in which they currently have key-positions. A first workshop with participation of other members of the Southern Cone has been planned

O 3 ALLIANCES WITH CIVIL SOCIETY ORGANIZATIONS

- **Workers' State Association (ATE), Santa Fe, Argentina**. From 2010 to date, members of the Southern Cone have developed educational materials for teaching Ecohealth for workers' organizations. These were incorporated in curricula of training modules for community and union leaders on environment, health, work and gender.
- **Labor Union of Valparaiso University**. There exists a commitment to continue collaborating with respect to new Ecohealth teaching workshops on the themes of gender, environment and health.
- **Fundación Sol, Chile**. Members of this Foundation became part of the Southern Cone of CoPEH-LAC and conducted an investigation on curriculum development activities and organized a workshop to

disseminate EcoHealth approaches in educational networks for union leaders with potential to continue these workshops.

6. Outcomes for SO1: Develop knowledge and skills in Ecohealth

1. **Researchers and teachers** who were sensitized through workshops and courses and collaborative actions performed by COPEH-LAC, **have incorporated the EcoHealth approach** a very practical way in their projects.
2. Increasingly, **members of CoPEH-LAC reflect, discuss and interchange information about Ecohealth** pillars and principals in the context of Latin America and the Caribbean, building on the experience of other members to refine ideas or visions of realities in their countries, which is reflected in publications and presentations at conferences and other meetings.
3. Researchers and teachers in Latin America promote and incorporate EcoHealth Approaches in undergraduate and postgraduate training, and community programs, contributing to the dissemination of the approach and becoming promoters of Ecohealth in their work environments.

7. Key-results SO2: Develop the Community of Practice on EcoHealth

To achieve this goal the following strategies were used:

- Strengthen existing capacities of research groups to build formative processes.
- Develop training processes which promote democratic participation and co-construction of knowledge between different groups and sectors.
- Offer training in the use of methodologies applicable to studies using an Ecosystem Health approach.
- Capture new research groups and establish collaborations to work more comprehensive, in particular highlighting the importance of trans-disciplinarity.

The development of the Community of Practice in EcoHealth, is reflected by the following results:

1. 120 People who make up the CoPEHs-LAC (in 2011, according to Social Network Analysis).
2. 17 Countries represented at the CoPEHs-LAC.
3. 12 Reports including detailed records of potential funding sources, their calls.
4. http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=select&id=2

4. 1 Mapping of funding sources corresponding to the thematic needs of the nodes (Alineación. Needs-sources).
5. 5 Proposals written at regional level to apply for funding sources.
6. 6 Proposal written at a nodal level to apply for funding sources.
7. 3 Regional meetings: Workshop Quito, Ecuador in July 2009 and General Assembly Brasilia, Brazil, 2010 and General Assembly, Arequipa, Peru, from 21 to 25 May 2012.
8. Formation of 5 active transversal working groups:
 - 8.1. Training and technical assistance for research projects on metals and neurotoxicity in Latin America. Main results are:
 - Workshop I Training in EcoHealth
 - Workshop II Training in EcoHealth.
 - 8.2. Training on social network analysis (SNA):
 - 3 formations on SNA applied to projects Ecosystem Approach to Human Health;
 - 8 groups from 4 nodes, which apply SNA in their projects with an Ecosystem Approach to Human Health;
 - 8 proposals for writing papers on the application of ARS projects with an Ecosystem Approach to Human Health.
 - 8.3. Concepts of Ecohealth and inter-disciplinarity:
 - 3 Workshops on methodological and theoretical discussions on Ecohealth approaches and links with other approaches
(http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=select&id=27).
 - Publication of a book organized around 20 chapters, including specific issues of the EcoHealth Approach.
 - 8.4. Curriculum Development:
 - Mapping of teaching experiences of the Ecosystem Approach to Human Health
http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=fileinfo&id=612.
 - 8.5. Gender:
 - 1 document with about the systematization of the incorporation of gender aspects in Ecohealth experiences. Preliminary Synthesis.
http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=fileinfo&id=561

8. Outputs for SO2: Develop the Community of Practice on EcoHealth

As a result of activities to consolidate our Community of Practice and to mobilize and diversify resources, the following products can be mentioned:

1. An assessment of network analysis shows CoPEH-LAC has consolidated its network.
2. Researchers working in the field of ecosystem approaches to human health have joined the Community of Practice.

3. A course has been designed to incorporate Ecohealth approaches into projects on metal contaminants and neurotoxicity in Latin America. Bibliographic material available for future formations http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=select&id=16
4. Design of a series of educative workshop on Social Network Analysis with educational materials updated bibliographies on Social Network Analysis which may be used for other projects in the future Ecosalud activities CoPEHs-LAC
http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=select&id=23
5. Guidance document for the development of curriculum and instructional design (draft).
http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=select&id=4.
6. Guide (draft) to incorporate the gender approach in projects under an Ecosystem Approach to Human Health. http://www.una.ac.cr/copehlac/index.php?option=com_remository&Itemid=102&func=select&id=26.

9. Outcomes for SO2: Develop the community of practice on Ecohealth

Efforts to develop the Community of Practice Ecosalud have resulted in the following outcomes:

1. The results of the SNA analysis show that our Community of Practice as grown since 2006, and that we have been successful in promoting horizontal communication and have achieved a decentralization of core members: even if core members would be absent the community would still be communicating and would continue continues its work. In the group exists a lot trust which shows to closely related to collaboration, an essential element for maintaining collaborations on medium and long term.
2. New people with experience in the field of EcoHealth recognize the work of CoPEH-LAC, and are interested in joining.
3. CoPEH-LAC members perform joint activities on cross-cutting themes, generating a better integration of the network and strengthening its sustainability over time.
4. External groups consolidate partnerships with COPEH-LAC, recognizing its leadership in the field of Ecohealth in Latin America.

10. Key results for SO3: to promote sustainable production models

Key results for this objective are:

- 1 proposal for an air quality management program with an ecosystem health approach in México City; this proposal was the result of workshop on Ecosystem Approaches to Human Health held in the State of Mexico, contact person: patriciab@yahoo.com.mx.
- 2 experiences on clean technologies in already existing projects.

11. Outputs for S03: to promote sustainable production models

As outputs can be mentioned:

- 5 policies or standards that incorporate or arise as a result of the focus and work of the node.

An example: In Brazil CoPEH members systematized and analyzed the results of the incorporation of ecosystem health approaches in the resolutions of the 1st National Conference on Environmental Health (2009), with respect to policy implementation strategies in the area of workers' health.

12. Outcomes for S03: to promote sustainable production models

CoPEH-LAC contributed to capacity building of research teams through the exchange of experiences, making them more capable when executing their projects and promoting cleaner production models. However, we are unable to quantify the direct contribution of CoPEH-LAC for this outcome.

Research teams that form part of CoPEH-LAC have contributed to changes in production systems making them more sustainable, by using ecosystem health approaches.

Impacts of CoPEH-LAC

Significant and lasting changes that CoPEH-LAC has developed during its second phase are the result of activities, products obtained and outcomes achieved, and construction process of the Community and the Ecosystem Approach in itself.

Impact 1: the generation of a critical mass in Latin America on EcoHealth Approach

CoPEH-LAC has managed to create a critical mass on EcoHealth Approaches in Latin America and the Caribbean. This is based on courses, modules, specializations in the field of Ecohealth that have been built into the curricula of many academic institutions. Through these ongoing educational programs, the current critical mass forms future researchers, teachers, politicians and decision makers. Therefore, it is expected that the impact of the CoPEH-LAC is sustainable and goes beyond funding

Impact 2: establishing important links with community leaders

Similarly, CoPEHs-LAC has established important links with community leaders. Through the training of leaders within the context of problems that are of local interest, these will be able to address their

problems considering aspects of participation, equity and gender, advocacy and complexity that characterize their daily experiences.

Impact 3: Building Partnerships

A third impact of CoPEH-LAC is at the level of partnerships. We managed to strengthen relations between different groups of researchers both in Latin America and globally, who apply the ecosystem approach to human health in their projects, policies and general work. These partnerships have the potential to be sustainable, as there is a desire to continue to work and build projects together in the fields of research, education and social action. An example of this sustainability is the fact that these groups have started to elaborate joint proposals to continue working together. Examples are the collaborations with IRD, PAHO, and CoPEH-Canada.

Impact 4: Construction of an Ecohealth field

CoPEH-LAC has managed to familiarize, capacitate and connect numerous researchers, teachers, and professionals from different institutions who feel the need to apply ecosystem health approaches and learn from these experiences and share these lessons.

Overall evaluation

1. The working model of the CoPEHs-LAC has been highly successful, and could be replicated in other parts of the world.
2. It is necessary to strengthen the conceptual development of the ecosystem approach to human health, in particular with regard to aspects of complexity.
3. With regard to the evaluation of CoPEH-LAC using social network analysis, it might be interesting to complement the questionnaire used in this analysis with some additional questions to understand outcomes and impacts of CoPEH-LAC activities with more detail.
4. It is noted that in CoPEH-LAC, we have a lot of practical experience in ecosystem health approaches, and results and products have been documented. There is great potential to systematize the learning of these rich experiences. For the next phase it is important to discuss how to include this aspect from the beginning.

Recommendations

1. IDRC should maintain a program on Ecosystem Approaches to Human Health, which is still quite new in academic, political and social environments and has a great potential to move forward sustainable development
2. It is recommended that personnel of IDRC receives training on EcoHealth approach, which could be supported by members of CoPEH-LAC and CoPEH-CAN in order to better understand the functioning of Communities of Practice and EcoHealth approaches,

3. On the longer term IDRC should incorporate Ecosystem Health Approaches as a cross-cutting theme within its institution.
4. Invite members COPEH-LAC to present our results in a meeting with high IDRC-officials, in order to share and discuss the results, lessons learned and challenges that have been expressed in this report.
5. Due to the success and numerous activities that have been performed in CoPEHs-LAC, there are still products, outcomes and impacts that are in the process of being published. Our success has limited us to publish our experiences by means of documentaries, informative materials, and publications. This is a challenge for future stages.
6. Finally it is recommended to IDRC, to become an actor who manages and promotes CoPEH-LAC as a community that shares, learns and contributes to the understanding of the links between health, environment and society.
 - a. The IDRC should seek links with other funding sources and promote EcoHealth Approaches since most funds from other sources are very disciplinary.
 - b. It would be beneficiary if IDRC could offer support to groups working with Ecosystem Approaches to Human Health to find other funding sources
 - c. Recommend the work of COPEH-LAC at an international level and help strengthening the links with other networks.
 - d. Put on the agendas of agencies such as UNESCO and UN, Ecohealth principles using products generated by CoPEH-LAC
 - e. Prioritize Ecohealth in IDRC's political agenda for the coming years.
 - f. Support opportunities for exchange between universities to promote ecosystem approaches to human health.