

93-8750 /3

ASSOCIATION OF AMAZONIAN UNIVERSITIES
HEALTH PROGRAM

PROJECT: ENVIRONMENTAL HEALTH IMPACT
ASSESSMENT IN AMAZONIA

UNAMAZ-IDRC-UNESCO/CRESALC

EVALUATION REPORT*

February 1, 1996

* by

Mr. Daniel Bondy, Director, Bureau of Science and Research Support and Mr. Roy Kwiatkowski, Chief, Office of Environmental Health Assessment, both from the Environmental Health Directorate, Health Canada

February 1, 1996

Introduction

This evaluation has been carried out according to the Terms of Reference that were provided by Unidad Coordinadora, Programa de Salud, Association of Amazonian Universities Health Program, January 15, 1996

The evaluation will follow the format proposed in the Terms of Reference

- Evaluation of accomplishments of the goals of the Environmental Health Impact Assessment (EHIA) program during the first phase (September 93-February 96)
- Critical analysis based on the evaluation, in order to examine macro aspects and specific aspects
- Discuss the importance of approving the second phase of the EHIA project
- Describe the necessary characteristics of phase two
- Provide key recommendations

The evaluation has been conducted by Mr Daniel Bondy, Director, Bureau of Science and Research Support and Mr Roy Kwiatkowski, Chief, Office of Environmental Health Assessment, both from the Environmental Health Directorate, Health Canada. Both reviewers have been involved on a part-time basis with the project since its inception and have visited all three of the National Research Centres and met with individuals involved with this project

Need for Environmental Assessment

It is now understood that projects carried out by government, industry, always suffer the consequences of their action or bear the costs of putting things right. Too often there is little incentive for an individual or an organization to spend money on prevention, environmental protection or clean-up. Yet, it is imperative that this be done because our continued good health is inextricably linked to the health of the environment. We, as humans, depend

on the environment for our air to breathe, our water to drink and our food to eat We extract and process natural resources from the environment to provide us with materials and energy Furthermore, we depend on the environment to absorb and assimilate our waste products

February 1, 1996

Environmental Assessment (EA) provides an effective and efficient means of integrating environmental factors into planning and decision making processes in a manner that promotes sustainable development

Human beings are at the centre of concern for sustainable development They are entitled to a healthy and productive life in harmony with nature

U N Conference on Environment and Development,
Rio de Janeiro, 1993

EA has been increasingly used by decision-makers to examine the ecological and related health, social, economic and cultural implications of proposed human activities Internationally, countries have either recently, or are in the process of, strengthening their environmental assessment legislation A significant change which has, or is occurring with environmental assessment legislation, is the clear recognition that the assessment of human health effects is an important component of environmental assessment As a result health professionals are being called upon, at a much greater frequency to participate in the environmental assessment process

The Amazon Basin is internationally recognized as a unique bioregion of significant importance to the global environment Activities being carried out within the Basin have impacts (environmental, economic, health) at the local, regional and international level EA is a tool which allows scientific data and information to be translated into knowledge on how to carry out development in the Amazon Basin in a sustainable manner

Environmental Health Impact Assessment in the Amazon

In recognition of the fact that the Amazon Basin is of significant global importance, that EA is an internationally accepted tool for planning and decision-making and that health impact assessment within EA is evolving rapidly, the project "Environmental Health Impact Assessment in the Amazon - EHIA" was conceived by the Association of Amazonian Universities (UNAMAZ) and the International Development Research Centre (IDRC) of Canada. The general goal of EHIA was to contribute to the study and the prevention of negative impacts on the environment and the health of Amazonian populations. The project upon completion will result in a network consisting of eight National Reference Centres (NRC), one for each country member of the Amazonian Cooperation Treaty, operating as an open, collaborative, non-competitive mechanism, with a horizontal structure and facilitating the exchange of information, methodologies and resources among institutions, projects and programs.

It is important to note that EA is a planning tool and not an environmental protection tool. EA is not a restraint to development and progress, but rather it is a process which ensures the integration of greater social responsibility and research into new technological solutions, with traditional related environmental research (chemistry, biology, ecology, toxicology, geography, sociology, anthropology, etc.)

Evaluation of Accomplishments

The Environmental Health Impact Assessment (EHIA) program conceived by UNAMAZ and IDRC was a ten year project, divided into three phases, two capacity building phases of thirty months each, followed by a five year phase of application. IDRC's funding and involvement are focused on phases I and II, with minimal participation in phase III. The first phase of the project, launched in September 1993, was aimed at capacity building in several fields of Environmental Impact Assessment methodologies by supporting post graduate programs, implementing national and

regional interdisciplinary workshops and training of human resources in Canada During Phase I, three NRCs were to be selected in Brazil, Columbia and Venezuela

The program has the following specific goals

Objective 1

"Create an institutional network aimed at facilitating the exchange of information and scientific-technological cooperation, paying attention to the comparative advantages of its members"

Evaluation

Three NRCs have been established, one in each of Brazil, Columbia and Venezuela Even though these three countries make up a large part of the Amazon, we are concerned that the other five countries and a large number of the other institutions of UNAMAZ have not been included This is surely limiting the effectiveness of the network in the entire Amazon basin geographically and in an inter-disciplinary fashion

Selection of the three NRCs was based on the institutions already doing significant work on research, teaching or extension services on topics related to EHIA in the Amazon Unfortunately, the reviewers could find no criteria for how participants within each centre were identified Participation by scientists within each centre seems to have been done through self identification rather than through any selective process

The scientists that we met seemed to have good scientific credentials but were sometimes lacking in management/coordination skills The reviewers strongly believe that the program will not achieve its true potential unless participants in the three NRCs commit to a collective regional team effort At this time, it appears that the program may have become a convenient platform for individual institutional promotion with little attention being paid by the NRCs to the development of a regional program for EHIA As a result, participation has often been sporadic and the integration of scientific disciplines within the centres varies greatly We believe that UNAMAZ/IDRC must empower the

Regional Coordinator to redirect the program towards its original aims of developing a coherent, integrated regional capacity to conduct EHIA in the Amazon Basin. While institutional development in each country is essential to this achievement, such development must be guided by the needs of the program, rather than by needs of the individual institutions.

This is not to say that each centre should have the same mix of individuals, as each NRC has access to the expertise of each of the other NRCs, but rather that some check list of EA disciplines needs to be developed at each centre and for the program as a whole. In this way, NRCs not having the expertise in any given discipline would recognize this deficiency and make use of the expertise of the other NRCs. This would facilitate the development of regional teams, as well as a national team, based on the needs of the program, rather than on the existing expertise within the individual NRCs.

The Centre in Venezuela would appear to have the best mix of scientific disciplines with the greatest consistency of participation. It would appear that considerable efforts were made by the other two NRCs to develop true EA teams, rather than a group of individual researchers, however their success has not been as good as that of the Centre in Venezuela. Much greater efforts in Phase II on team building are necessary within all NRCs and particularly between NRCs.

An important aspect of EA is the need to have participation of all concerned stakeholders. Thus EA cannot be done simply as an academic exercise. Efforts in Phase II to include non-government environmental groups, government departments, industry and public concerns needs to be addressed. An additional benefit of including these stakeholders would be the opportunity to replace disappearing Canadian funding with South American government and industry funding.

Though the network exists and though communication between the Coordination Unit and NRCs seems to function reasonably well, communication among NRCs and within a NRC need to be improved. Identification of participants within this program and their areas of expertise, may facilitate communication between NRCs.

Clear annual goals for each NRC, with quarterly updates on milestones, distributed through internet to the Coordination Unit as well as the three NRCs will enhance the communication necessary for this program to meet its primary objective IDRC and UNAMAZ must play a more interactive role in this program Consideration should be given to funding NRCs quarterly based on accomplishments rather than providing funding yearly at the beginning of the fiscal year and to giving the management responsibility for this to the Regional Coordinator

Objective 2

"To facilitate the training of a minimum necessary number of researchers, professionals and technicians to carry out evaluations of adverse impacts on environmental health"

Evaluation

Considerable effort has been made to achieve this objective Training has taken place in Canada in June 1994, as well, various National Courses and a Regional Course in Cuiabá in August 1995 have taken place The reviewers have participated in the training in Canada (1994) and Cuiabá (1994) The Colombians have been trying to organize a course for their NRC which would complete the objective We are unsure what is in store for the remaining five countries

As indicated in the evaluation of Objective 1, no criteria were set to ensure a minimum number of participants per NRC or the proper mix of researchers, professionals and technicians (by discipline) within the NRCs and therefore it is difficult to assess whether or not this objective has been met **The high turn over of participants within this program has hurt the achievement of this objective.** A greater degree of commitment by participants in Phase II is necessary

The training on EA done in Canada and the EA training provided by the reviewers in Cuiabá was done in English It was felt by the reviewers that the proficiency in English of some of the trainees was not adequate for them to have obtained the full benefit from the courses Once again criteria for selection of

participants (in this case the criteria of being proficient in english) in this component of the program would have been helpful

Greater efforts to either find Spanish/Portuguese speaking EA trainers or to ensure that trainees are more fluent in English are needed As well, those trained must be prepared to train others (not just students, but also fellow research scientists) so that this program becomes self sufficient in its EA training

By forcing participants in the training programs to provide training to others ensures their undivided attention during the training In addition, english has long been the accepted universal language for many scientific endeavours and is particularly true in this area The majority of relevant EA literature is in english Establishing english as the working scientific language might also facilitate the integration of the portuguese speaking Brazilians into the network

Objective 3

To strengthen the scientific and technological capacity of the institutions of the region to incorporate and create knowledge, technologies and strategies that enable them to study, evaluate and mitigate such effects.

Evaluation

EA requires a fundamental paradigm shift in thinking from ecosystem assessment EA is a planning tool, to be carried out before the project starts, providing advice to decision-makers on how to mitigate significant negative impacts Though three centres have been established and ecological scientific knowledge, technologies and strategies have been exchanged, the reviewers have seen little team work within centres and no team work among centres with regards to this objective (i e create new knowledge and strategies which would allow for the paradigm shift) Venezuela appears to be the only centre to have developed a graduate course on EA It is too early to judge the quality of this course If it is of high quality as we expect it will be, Venezuela will be on an equal, if not higher, level of training capacity as Canada

Efforts to improve knowledge on ecosystem assessment (assess impacts of projects after they have occurred) do not meet the needs of this program. All centres should review their efforts under this objective, to ensure that the knowledge, technologies and strategies being developed, indeed meet the needs of EA and are not simply a pulling together of existing ecosystem assessment knowledge, technologies and strategies.

Objective 4

To study and prevent the negative effects of projects to be implemented or which are already implemented in the regions

Evaluation

Considerable efforts have been made to meet this objective. Study teams at each NRC have been established to study Gold mining. The major difficulty associated with meeting this objective is that the study teams are not carrying out an environmental assessment, but rather conducting environmental (ecosystem) studies of the impacts of Gold mining on the Amazon Basin Ecosystem. The Gold mining case study should be more focused on to a single mine or another project that is not so all encompassing. The paradigm shift in thinking, outlined in Objective 3, has not occurred.

EA assessment is a planning tool to be carried out before a project starts. It makes use of existing ecological, toxicological, epidemiological, social, etc., knowledge to predict impacts and provides mitigative measures to reduce those negative impacts which are considered significant. Thus it is imperative that there be public (to identify perceived negative impacts) and industry (to follow through on identified mitigative measures) involvement in EA. The information obtained by the EA process must be provided to decision-makers who have the ability to alter the way in which the project will proceed.

Objective 5

To promote the permanent surveillance of the environment in close contact with community organizations, development agencies and political authorities

Evaluation

The reviewers have not participated in any activity with regards to this objective and therefore have no comment

Macro Aspects:

Development projects, either site or linear, will increase in the following years as bi-national and multi-national activities take place in the Amazon Basin. Because of the global significance of the Amazon Basin, activities carried out in this region are often closely watched internationally

The Amazon Basin is shared among eight countries. It is imperative that significant adverse transboundary environmental effects be identified and addressed at the earliest possible stage. Therefore, the need to give explicit consideration to negative environmental factors at an early stage in the decision-making process by applying EA, at all appropriate administrative levels, is a necessary tool to improving the quality of information presented to decision makers so that environmentally sound decisions can be made

Development models transplanted from the industrialized countries to the environmental, health, economic, social and political realities of the Amazon Basin have failed to protect the fragile environment of the Amazon ecoregion and the human life which depends on it. New development strategies are needed that can ensure employment, thus improving living standards for the present and future generations, without causing significant environmental or health effects. These new development strategies must be developed within the Amazon Basin, by those living within the Basin

Efforts presently underway in this EHIA program to improve the capacity of the eight countries in the area of environmental assessment through the creating of an institutional network are timely if future significant environmental impacts at the local, regional, national and global levels are to be avoided.

The three phased approach being used is an effective means to assess and re-evaluate the overall goals and objectives of the program. It is not surprising that in a program of this magnitude, involving several independent institutions within eight countries, that difficulties have arisen. The initial implementation stages or growth period of large programs, such as EHIA, are always the most difficult.

This program has had its share of difficulties but because of the sound management approach of the Coordinating Unit, the efforts of the chairs of the NRCs, and the dedication of some key individuals, this program has advanced considerably. However, in order for this program to move on, individual efforts need to be replaced by team efforts.

Specific Aspects:

The Coordination Unit for this program would seem to be functioning well. A difficulty would seem to be the lack of input the Coordination Unit receives from IDRC and UNAMAZ and the lack of control the Coordination Unit has over the NRCs. It is now evident to the reviewers that UNAMAZ and IDRC should have made explicit the role they expected Canadian collaborators to play in the project. This would have facilitated our interactions with the EHIA groups and increased the comfort levels of all concerned. As advisors to the project and unfamiliar with this type of international role, we realize now that we could have been more helpful but were afraid to be seen as interfering or being too dominant.

A Steering Committee chaired by the head of the Coordination Unit and made up of UNAMAZ, IDRC, representative members from the Amazonian Cooperation Treaty, government departments, Non-Government Organizations and Industry would facilitate the planning and implementation of this program. This "buy in" by

the major stakeholders is necessary if this program is going to develop in the future beyond being simply an academic discipline within the University system

Workplans can then be established by the NRCs which will meet the expectations of the Steering Committee. If funding was approved by the Steering Committee and funnelled through the Coordination Unit, top down control of this program would be possible

Phase II:

Though Phase I of this program has had its difficulties, considerable progress has been made, which will be lost if Phase II is not carried out. The paradigm shift from carrying out ecological assessments to EA is just beginning. The team approach so necessary for this project, has also just started and will be lost if Phase II is not completed.

Suggestions for Phase II:

Criteria for participation of individuals in Phase II need to be established and a review of Phase II objectives needs to be carried out by the Coordinating Unit in consultation with the Steering Committee proposed.

NRCs should commit the time and personnel to fulfilling the goals of Phase II. Much greater communication and team work among NRCs in Phase II are needed. The NRCs and the Coordination Unit must make better use of Internet and regular (at least monthly) telephone conference calls. This would help maintain momentum between meetings. Phase II is not only an opportunity to carry out an EA, but also to learn how to carry out an EA recognizing the unique cultural, political and economic realities of the Amazon Basin.

Lessons learned by any one NRC must be transferred to all eight countries. If all NRCs can work cooperatively, the need for outside consultants should be greatly reduced. EA expertise, generated from within the program, will be passed on to others within the program, rather than expertise generated in other

countries. However, in order for this to happen, the NRCs must carry out a true EA, using public consultation, and provide scientific health advice to decision-makers. Not until all the components have been done, will this program be truly self sufficient.

The pilot projects proposed for Phase II should be reviewed based on the evaluations (by Roberto Briceño-León, as well as this review) performed and comments from the Steering Committee. Any necessary changes should be made to improve the probability of success once the review is completed.

Management of the funding should come from the Regional Coordinator on a quarterly basis and be based on accomplishments in the previous quarter.

Key Recommendations

- 1 Involve the other five amazonian countries in the project
- 2 Establish/review criteria for participation of individuals and NRCs in the project
- 3 Develop a check list of EA disciplines needed to meet the objectives of this program and develop teams based on program needs
- 4 Identify weaknesses or gaps in teams and focus training efforts to improve strengths or fill gaps in teams
- 5 Involve industry and government in the project
- 6 Improve communication among NRCs and with the Coordination Unit
- 7 English be adopted as the working scientific language for the project.
- 8 Gold mining study needs to be more focused or replaced

- 9 Greater efforts to bring other co-financing agencies or groups (CIDA, WHO, World Bank, Government, Industry, etc) into the program should be made
- 10 Create a Steering Committee with formal representation from UMAMAZ, IDRC, as well as other stakeholder, to improve accountability and cooperation
- 11 Proceed with Phase II so as not to lose the inertia generated to date and realize the full potential of the project
- 12 Carry out another review of this program upon completion of phase II

Roy E Kwiatkowski
Chief
Office of Environmental
Health Assessment
Health Canada

Daniel Bondy
Director
Bureau of Science and
Research Support
Health Canada

February 1, 1996