

PROPOSED
FRAMEWORK

International Study

of the Effectiveness

of Environmental

Assessment



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About this Study

The Federal Environmental Assessment Review Office (FEARO), in collaboration with the International Association for Impact Assessment (IAIA), commissioned in June 1993 an international study of the effectiveness of environmental assessment. The preliminary framework for the study is outlined in this discussion paper. It includes

- a statement of rationale for the study;
- an articulation of the objectives and themes of the study;
- a recommended approach to the design and implementation of the study; and
- proposed arrangements for institutional participation and cost-sharing.



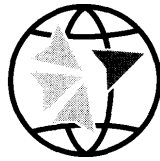
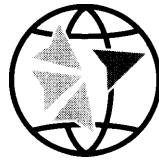


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INTRODUCTION

Environmental assessment (EA) stands at both a milestone and a crossroads in its evolution. The value of EA is widely acknowledged and established. Many countries and international organizations have EA systems already in place. Undoubtedly, others will follow in accordance with the provisions of the declaration of the 1992 United National Conference on Environment and Development (UNCED) or Earth Summit and the recommendations contained in Agenda 21, the global program of action agreed to at the Earth Summit. This document also cites the problems often encountered in the application of EA, and emphasizes the need to strengthen methodologies, procedures and institutional capacities.

A concerted response by all sectors of the community will be necessary if EA is to realize its full potential in supporting informed decision-making. Canada's Federal Environmental Assessment Review Office (FEARO) and the International Association for Impact Assessment (IAIA) have recognized the need for a concerted response. This conclusion is the basis for a memorandum of understanding between the two organization. Both FEARO and IAIA will be cooperating to promote and advance the practice of EA which is broadly defined to include all areas of impact analysis. Key activities under the agreement involve

- convening an environmental assessment summit of heads of national agencies and international organizations;
- commissioning an international study of the effectiveness of EA; and
- establishing a link between these two activities and IAIA conferences.

The theme proposed for the effectiveness study is, "Evaluating Practice to Improve Performance". It focuses on the lessons that can be gained by examining recent experience with EA, both nationally and internationally.

The purpose of the effectiveness study is to identify

- whether or not EA has made a difference to decision-making, and if so, where;
- what works well and what does not at the operational level; and
- how the overall approach might be improved and extended to meet the added demands imposed by Agenda 21.



The study will promote an exchange of views and information based on case experience and the implications of this experience for process development. It will involve administrators, practitioners and others who are directly responsible for implementing EA laws, policies and guidelines.

A proposed framework for the effectiveness study is outlined in this paper. It should be read by interested organizations and individuals as an invitation to participate in the *International Study of the Effectiveness of Environmental Assessment* (the study) and a basis for further discussion of its design and direction.

Other initiatives for strengthening EA are also underway at the national and international levels. Wherever possible, the thrust of the FEARO/IAIA study will be toward reinforcing and complementing these activities.



I. BACKGROUND AND RATIONALE: ENVIRONMENTAL ASSESSMENT IN A POST EARTH SUMMIT PERSPECTIVE

The agreement and documents of UNCED call for action on many fronts. One such front is the process of integrating environment and economic considerations in decision – making as a key element in the pursuit of sustainable development. Such a process, in turn, must be bolstered by improved approaches to planning and management, and by more systematic analytical procedures (UNCED, Agenda 21, Sec. 8.5). A key aim of these reforms is to promote “full-cost” accounting of development policies, programmes and projects. EA provides an important building block for this purpose.

From the outset, the intent of EA was to incorporate environmental and social concerns into decision-making processes that were (and still are) weighted in favour of economic considerations. This approach, initially embodied in the 1969 *National Environmental Policy Act* (NEPA) of the United States of America, is now employed world-wide by over 50 countries and promoted by an equivalent number of international organizations. At a minimum, EA is applied to predict and mitigate the adverse effects of development projects and activities. More optimally, EA is used to guide public policy-making in balancing economic, social and ecological values and considerations to ensure that development options are consistent with resource capabilities and can deliver community benefits.

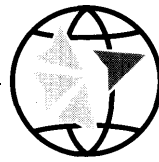
The history of EA is one of continued evolution. During the last twenty-five years, EA has shifted from a narrowly focused, technically-based, reactive approach to a more flexible, multi-purpose, planning-oriented process which encompasses social, health and risk, as well as ecological impacts. Many corresponding innovations in methods, procedures and institutional arrangements have occurred – well beyond what policy critics allow. Figure 1 summarizes the main phases of the evolution of EA.



FIGURE 1

The Evolution of Environmental Assessment

DATE AND PHASE	TRENDS AND INNOVATIONS
1. c. 1970 Pre-EA	Project review based on engineering and economic studies, e.g., cost- benefit analysis; limited consideration of environmental consequences
2. 1970-1975 Methodological Development	EA introduced; initially focused on identifying, predicting and mitigating bio-physical effects; opportunity for public involvement in major reviews
3. 1975-1980 Social Dimensions Included	Multi-dimensional EA, incorporating social impact assessment (SIA) and risk analysis; public participation integral part of development planning and assessment; increased emphasis on issues of justification and alternatives in project review
4. 1980-1985 Process and Procedural Redirection	Efforts to integrate project EA with policy-planning and follow-up phases; research and development focus on effects monitoring, EA audit and process evaluation; and on mediation and alternative dispute resolution approaches; adoption of EA by international aid and lending agencies and by developing countries
5. 1985-1990 Sustainability Paradigm	Scientific and institutional frameworks for EA begin to be rethought in response to sustainability ideas and imperatives; search begins for ways to address regional and global environmental changes and cumulative impacts; growing international cooperation on EA research and training
6. 1990-present Second-Generation EA	SIA of policies, programmes and plans introduced, international convention on transboundary EA; UNCED places new demands on EA for expanded concepts, methods and procedures for assuring sustainability



In reality, of course, the record of EA is mixed, often with variations occurring within, as well as among, agencies and organizations. Numerous studies in the literature expose the inconsistencies between principles and performance, and document the technical, procedural and structural weaknesses of contemporary practice. Examples of key problems include the following:

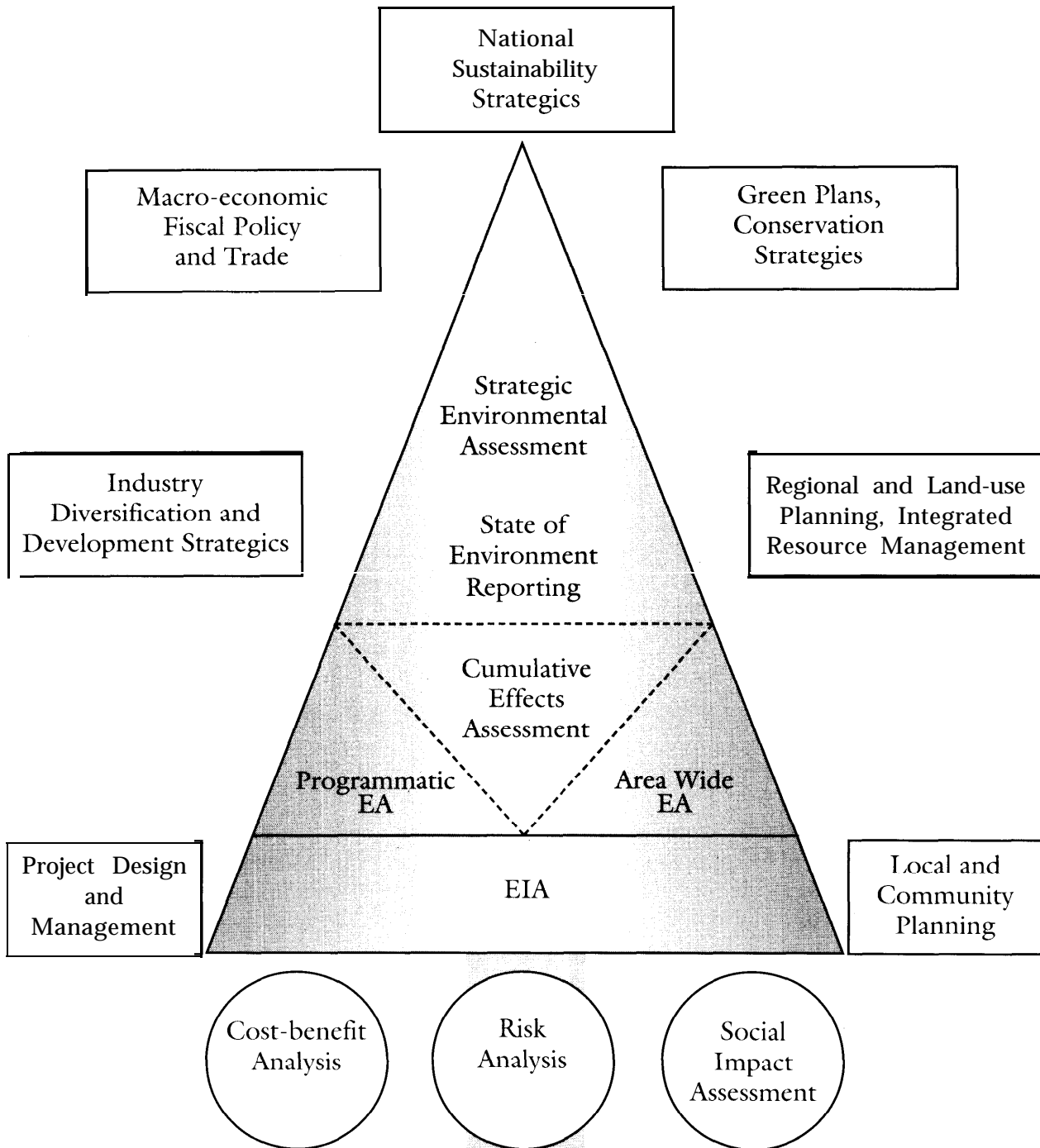
- **The variable quality of environmental impact statements (EISs)**
The accuracy of impact predictions, the utility of mitigation and management measures, and the relevance of reports for decision-making are still frequently called into question.
- **Inconsistencies in process administration and guidance**
Time delays and the cost of applying EA remain a serious concern for project proponents. The absence or lack of independent review of the quality of EISs is seen as a major constraint by many impact assessors.
- **Discontinuities in linking EA to the larger structure of decision-making**
In order to operate effectively, project EA requires a coherent policy-planning context and systematic follow-up procedures. Often neither area is well established.

These issues are brought into progressively sharper focus by the requirements of Agenda 2 1. By most standards, existing systems of environmental management, including formal assessment processes, constitute an inadequate and ineffective response to current scales and rates of ecological deterioration and social disruption. Environmental impacts in the closing years of the twentieth century are global in scope and cumulative in nature, and threaten to impair the regenerative and assimilative capacities (“source and sink” functions) of natural systems. In effect, a “second-generation” EA process is needed, one which focuses on the sources as well as the symptoms of unsustainability and is linked to other policy and planning instruments.

Looking ahead, recent advances in EA hold considerable promise for building such an approach. The key elements are identified in Figure 2. In this model, the conventional (project-oriented) approach is linked to strategic environmental assessment (SEA) of development policies, plans and programmes. These approaches remain to be coordinated with each other and with other strategies and instruments for environment-economy integration identified in Figure 2. No doubt, this will be a long haul, but then so was the road from NEPA (1969) to the UNCED Declaration (1992).



FIGURE 2
Key Recent Advances
in Environmental Assessment





In the interim, there is much that can be done by strengthening and extending recent advances in process development. The development of EA systems that will contribute more effectively to the assurance of sustainability requires two specific interrelated initiatives:

- translating the principles of environmental sustainability into operational terms; and
- recasting procedures and methods in order to apply them.

An example of these requirements is outlined below in Figure 3.

FIGURE 3
**Some Requirements for Environmental Assessment
to Assure Sustainability**

- Screening economic and development policies for their conformity with sustainability goals and principles, e.g., to identify subsidies with adverse environmental effects
- Preliminary assessment of environmental costs of development programmes to identify low-impact, resource-efficient energy, transportation and manufacturing strategies
- Area-wide assessment to establish resource and land-use zoning systems for regional development
- Extended project EA to identify in-kind compensation for natural capital losses, e.g., offsetting residual fish and wildlife losses by ex-situ habitat rehabilitation and enhancement

The point to be emphasized here is that the changes necessary to convert EA from a tool for impact minimization to an instrument for achieving sustainable development involves, first and foremost, the sharpening of current ideas and approaches. The systematic and integrated application of these changes, linking “best guess” science to the exigencies of decision-making, will constitute the cutting edge of EA practice. Examples include the application of EA to cope with cumulative environmental effects; to assist with closing waste cycles and loops; and to establish “acceptable” risk thresholds and capacities for natural systems. Whether or not these adjustments will be achieved must be gauged by reference to practice rather than theory.



II. THEMES AND OBJECTIVES OF THE STUDY

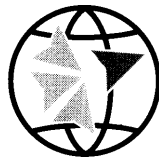
The FEARO/IAIA Study of the Effectiveness of Environmental Assessment will focus on “the art of the possible”. The theme of the study is “Evaluating Practice to Improve Performance”. It will involve examining what is done versus what can be achieved within existing processes and approaches, and considering how the status of contemporary practice relates to what is required by Agenda 21. Emphasis will be placed on

- exemplifying the “best practices” of industrialized and developing countries;
- facilitating working exchanges of views and information among EA professionals; and
- identifying cost-effective actions and improvements for process development.

There are four objectives for the effectiveness study:

- to review and compare current applications, emerging trends and leading issues in EA;
- to anticipate future needs and recommend new directions for improving the application and practice of EA by industrialized and developing countries;
- to examine the relevance of EA to decision-making in selected countries and agencies; and
- to document what works well and what does not in existing approaches.

The benefits of this exercise will derive from sharing and comparing information and views on the strengths and weaknesses of EA practice. All agencies and organizations have something to teach and something to learn. Concrete results will only come from agencies applying the lessons learned – whether it be from self-evaluation, from the experience of others or from a combination of both. For the longer term, this type of exchange will also strengthen the basis for international cooperation and the building of partnerships which is identified in Agenda 21 as a critical element for environmental problem-solving in the next century.



More immediately, the study will support the International Summit on Environmental Assessment which will be held in June immediately prior to the 1994 IAIA Annual Conference in Quebec City. The interim results of the effectiveness study will provide information relevant to current applications, leading issues, emerging trends and future needs and directions in EA. This is the currency in which the summit participants, that is, the heads of agencies and international organizations, will deal. In addition, the participation of their staff in the study will help create a synergy for a successful and productive meeting. Finally, the focus of the study, "Evaluating Practice to Improve Performance", is consistent with the forward-looking theme of the IAIA '94 conference, "Twenty Five Years of Impact Assessment: Looking Back and Projecting the Future".

Important reforms to EA legislation, guidelines and operating practices are being instituted or implemented by many national and international agencies. These reflect attempts to improve accountabilities; to deal with cumulative impacts; to facilitate greater public involvement; and to provide an increased level of sustainability assurance. Examples include the *Canadian Environmental Assessment Act* (1992), New Zealand's *Resource Management Act* (1990) and the World Bank's *Operational Directive on Environmental Assessment* (1989). Such initiatives reflect leading trends in EA practice. A comparative analysis of them can yield important lessons for improving performance.

Without some form of post-review, EA is a relatively static, linear exercise, characterized by a tendency to "re-invent the wheel", rather than a dynamic, interactive process of continuous learning and improvement. The opportunity to make EA a more efficient and streamlined process is also lost, with cost savings being foregone. An investment in EA effectiveness analysis can thus pay important dividends, and represents an outlay that should be fully recoverable. Many agencies now recognize these benefits, and increasing attention is now being directed to this review phase. Key elements of approach are identified in Figure 4.



FIGURE 4

Typology of Approaches to the Effectiveness of Environmental Assessment

- Generalized overviews of the “state of the art”
- Case studies of methods, procedures, arrangements
- Step-by-step analysis of EA components and phases (e.g., scoping, mitigation, monitoring)
- Review of the quality of EISs
- Review of the classes of EA activity (e.g., hydro, roads, etc.)
- Conformity and performance evaluations to respectively check compliance with procedures and accuracy of predictions
- Start-to-finish review of EA process for major projects
- Review of agency programs and implementation practices
- Periodic appraisal of EA policies, laws and guidelines

This level of examination only provides a limited understanding of whether or not EA makes a difference and, if so, how. At the end of the day, the usefulness of the process rests on its contribution to informed decision-making, and by extension, to safeguarding resource use options, ecological functions and community values. These relationships are impossible to determine precisely, but they constitute the litmus test of the effectiveness of EA. In this perspective, generalized reviews of the “state of the art”, methodological and procedural case studies, EA audits and periodic appraisals of EA systems, and other approaches identified in Figure 5, all come into sharper focus. By extension, so do the enabling conditions of operational excellence and best practice.



III. A PROPOSED APPROACH

A phased approach to research and analysis is recommended. The main steps are listed below with provisional time frames and are further elaborated in this section. Figure 5 provides a schematic overview of components of the study and their relationships.

FIGURE 5 **Four Step Examination of the Effectiveness of Environmental Assessment**

STEP 1

Policy Analysis of Leading Trends and Issues

STEP 2

Contribution of EA to Development Decision-making
Examples and Comparisons

STEP 3

Operational Excellence in Application of EA
Methods, Procedures and Components

STEP 4

Conclusions and Guidelines for Sound Practice

- Step 1 (*October 1, 1993 – June 30, 1994*) A review of current practice, emerging trends and future directions in process development, with interim results presented to the summit
- Step 2 (*January 1, 1994 – December 31, 1995*) An evaluation of the contribution of EA undertaken in selected countries
- Step 3 (*April 1, 1994 – March 31, 1995*) In-depth evaluation of case studies and demonstrations of EA practice
- Step 4 (*completed by October 31, 1995*) Conclusions and recommendations, with draft findings to be presented at the 1995 IAIA annual conference



Step 1 Policy Analysis of Leading Trends and Innovations

The point of departure for the study will be a chronology of EA with particular reference to recent developments (i.e., within the last five years). See Figure 1 (p. 7) for a summary of key trends and innovations. It underlines the importance of the sustainability paradigm. EA provides a major starting point for what is now being called sustainability analysis for integrated decision-making. Further progress in that direction will build on emerging trends and innovations.

In particular, the following themes may be of particular relevance to Step 1 of the study:

1. Guiding Values and Principles
2. Sustainability Concepts and Principles
3. Strategic Environmental Assessment
4. Cumulative and Large-scale Effects
5. Integrated Approaches to Impact Assessment
6. Public Participation and Dispute Settlement
7. Monitoring and Follow-up
8. Process Integrity and Harmonization
9. Relationship of EA with Decision-making Processes.



Step 2 Contribution of Environmental Assessment to Decision-making for Development Projects - Examples and Comparisons

The conventional wisdom is that an integrative and adaptive approach to EA leads to informed choice, in which a balance is struck between environmental and socio-economic considerations. In practice, however, the contribution of EA to decision-making is rarely clear-cut. Other factors may intervene to moderate the influence of even an exemplary report. Subsequently, the linkage between the EA process and the extent to which resource, environmental and community values are safeguarded becomes highly attenuated. Any formal cost-effectiveness measures would be highly contrived and circumstantial.

More practically, a simple format for an evaluation audit may be devised that can be easily and widely applied in different institutional settings. The following checklist of questions constitute one approach:

	YES	NO	PARTLY
Did the EA contain recommendations on terms and conditions?	✓	✓	
Did the project approval correspond to the EA? (Were reasons for the decision given; terms and conditions specified, etc.?)	✓	✓	✓
Did the EA contain additional suggestions or recommendations, e.g., regarding policy, institutional changes? (Identity and itemize.)	✓	✓	
Did the responsible authorities deal with these? (In what ways? Was there any evidence of longer term influence on decision-making processes?)	✓	✓	✓
Did other participants in the EA process respond to report in any way? (Who? How?)	✓	✓	✓
Did the process itself appear to have any wider educational influence? (Was there any evidence of consensus- building; of modifications of style and approach by intervenors, proponents, etc.?)	✓	✓	✓



The first priority in this phase of work will be directed to developing a more comprehensive decision-audit framework. This will be done in consultation with interested agencies and organizations, with a view to their testing and selectively applying the framework. A small follow-up workshop might be held to draw out the lessons from several audits, and revise the framework for ongoing use by others.

Step 3 Operational Excellence in the Application of Environmental Assessment – Methods, Procedures and Components

The evaluation of EA practice can take a number of forms. A typology for the study is set out in Figure 6. It breaks down the main components of EA practice into technical analysis, public consultation, and process administration. Preliminary elements and criteria for analysis are also identified. The four “Rs” of operational excellence in EA – *rigorous* analysis, *responsive* consultation, *responsible* administration and *relevant* decision-making – may be looked at generally, with respect to a particular project review, and/or in relation to a component or phase of EA.



FIGURE 6

Evaluation of Environmental Assessment Practice

A Typology of Research and its Application to Environmental Assessment

Research Theme	Elements of Analysis	Criteria of Effectiveness
1. Technical Analysis	Accuracy of impact predictions, adequacy of data and methods Appropriateness of mitigation and monitoring	Rigorous
2. Consultative Procedures	Sufficiency of information Suitability of measures for involving publics and incorporating their concerns	Responsive
3. Institutional Arrangements	Efficiency and fairness of administrative procedures for conducting assessments and coordinating activities	Responsible
4. Decision-making Implementation	Utility of findings for project approval, design and control Contribution to design of strategies and instruments of environmental management	Relevance • to immediate problem-solving • to long-term development of policy and institutional frameworks

In order to gain the maximum advantage from an exchange of international experiences on the practice, the focus should be as concrete and specific as possible. Figure 7 illustrates a matrix for organizing evaluations. This may be applied to ecological, social, health and risk processes. Wherever possible, however, the focus should be on case experience which integrates some or all of these dimensions.



FIGURE 7
Matrix for Evaluation

	Technical Analysis	Public Consultation	Process Administration
Screening			
Scoping			
Prediction			
Evaluation			
Mitigation			
Monitoring			
Implementation			
Audit			
Evaluation			

Step 4 Conclusions and Guidelines on Sound Practices

The conclusions of the study should be organized into generic guidelines for the sound practice of EA in pursuing the goal of sustainability. It will remain the responsibility of participating agencies and organizations to review and apply these conclusions as appropriate. Emphasis will be placed on ensuring that the final report (and supporting documentation) is user-friendly, relevant to practitioners, and incorporates imaginative communication of tool kits, resource aids, new directions and so on.

The format and organization of the publication of study materials should also be flexibly conceived. In addition to the interim and final reports, there may also be a number of bulletins, background papers, manuscripts, reports, studies and cases being assembled. Opportunities for publishing these can be identified at an appropriate time. As well, much of the information gathered will be available on an electronic database and will undoubtedly be relevant to further development of procedural guidelines by industrialized and developing countries and international organizations.



IV. OPTIONS FOR COLLABORATION

A collaborative approach will be adopted for data gathering and analysis. This will involve building partnership on several levels – in the first instance through existing multilateral and bilateral arrangements. Options for joint ventures or working cooperative agreements include the following:

- **Commissioned research** – which meets both the objectives of the study and the sponsoring organization, e.g., evaluation framework and methodology, review of quality of EISs;
- **Contributed case studies and ‘think pieces’** – which draw on operational experiences of participating organizations, e.g., Dutch EIA Evaluation Committee;
- **Focus workshops and seminars** – which are pre-planned to meet study objectives and themes, e.g., Australia-Canada-New Zealand tripartite workshop series;
- **Affiliated conferences, seminars, workshops and symposia** – which deal with one or more aspects of the study ,e.g., Centre for Environmental Management and Planning;
- **Pilot and demonstration projects** – which capitalize on relevant initiatives that are being undertaken by study partners, e.g., World Resources Institute (WRI) study on EA capacity building in Asia; and
- **“Posted” work** – which individuals and organizations have completed and which augments or enriches the study.

The IAIA annual conferences and regional chapter meetings also provide a major “window of entry” to engage practitioners in the effectiveness study. Members can become actively involved in a number of ways:

- **Task forces** specifically established to deal in depth with study themes and issues;
- **Value-added sessions** in which organizers of IAIA meetings generate study inputs consistent with their own interests and objectives;
- **Questionnaire surveys** to identify practitioners’ perceptions of the strengths and weaknesses of EA, with provision for in-depth follow-ups with target groups at IAIA meetings.



COST-SHARING

The cost assumptions underlying the proposed approach are the following:

- FEARO will provide a core budget for planning and organizing the evaluation study and for convening the EA summit.
- IAIA will provide in-kind support, notably in the form of co-planning and sponsorship of the study, integrating aspects into conference organization and engaging their members.
- Other national agencies and international organizations will participate in and support the study.

For additional information

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Linkages Between the Environmental Assessment Summit, the International Study and IAIA Conferences

