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INTERIM SCIENCE COUNCIL

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**Report from
iSC's Standing Panel on Impact Assessment (SPIA)
(Agenda Item 6)**

For Discussion: The attached report from SPIA will be introduced by its Chair, Dr. Hans Gregersen. iSC Members are invited to comment on the report, and to provide suggestions on the future directions of SPIA's work under the new Science Council.

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ISC STANDING PANEL ON IMPACT ASSESSMENT (SPIA)

REPORT TO ISC 84

This is the last report to the CGIAR's interim Science Council (iSC) from the current Standing Panel on Impact Assessment (SPIA). In addition to providing a summary of activities and progress during 2002-03, this report also provides SPIA's suggestions for maintaining continuity and an active programme during the transition to the new SPIA under the Science Council.

1. MANDATE AND COMPOSITION OF SPIA

The existing mandate of the CGIAR Standing Panel on Impact Assessment (SPIA) is threefold, namely to:

- provide CGIAR Members with timely, objective and credible information on the impacts at the System level of past CGIAR outputs in terms of the CGIAR goals;
- provide support to and complement the centres in their ex post impact assessment activities; (this includes facilitating inter-centre impact assessment efforts and providing a forum for exchange of experience from impact studies); and,
- provide feedback to CGIAR priority setting, and create synergies by developing links to ex ante assessment and overall planning, monitoring and evaluation functions in the CGIAR.

Members of SPIA are chosen for their independence and impact assessment expertise and familiarity with international agricultural research. The present members of the Standing Panel are Drs. Ruben Echeverria (Uruguay) and Hermann Waibel (Germany). The Chair is Hans Gregersen (USA), who also serves as an ex officio member of the iSC. Alain de Janvry (France) and Elias Fereres (Spain) are ex-officio members of SPIA in their capacities as Chairs of SCOPAS/iSC and SCOER/iSC respectively. Tim Kelley is the person assigned to SPIA from the iSC Secretariat. In addition, iSC Secretariat member, Sirkka Immonen, has been working with SPIA on the training impacts study described below.

2. CURRENT STATUS OF SPIA ACTIVITIES

Given the importance that CGIAR members assign to independent and transparent assessment of the impacts of their CGIAR investments, the current SPIA wants to help ensure that there is a smooth transition to an active and relevant new program of impact assessment under the new Science Council. Thus, what follows in this section is a discussion of on-going, agreed upon activities being undertaken by SPIA together with recommendations for their successful completion. In Section 3, SPIA, based on its experience over the past years, provides discussion and recommendations on how to proceed with on-going impact assessments that have planned timeframes beyond mid 2003, and on promising new activities that the Science Council might consider for the future.

Many of the below mentioned activities were discussed in SPIA's report to AGM02 and have been widely discussed by the Members. Brief updates are provided here on this older set of activities. In several cases, SPIA has recently completed or is soon about to complete activities and/or publish final reports, e.g., the germplasm enhancement impacts

study, the environmental impacts assessment, the proceedings of the Costa Rica IA conference, and the meta-analysis of B-C studies. The IFPRI led poverty impacts study also has been ongoing for some time, and significant progress has been reported at several CGIAR meetings. The current SPIA report provides revised plans for bringing this activity to a successful completion within the coming year and moving poverty impact assessment into centres as a mainstream activity.

2.1 Germplasm Improvement Impact Study

With the publication of the book “Crop Variety Improvement and its Effect on Productivity: The Impact of International Agricultural Research” (eds. Evenson and Gollin) in April, this IAEG/SPIA activity draws to a close. The 23-chapter book published by CABI documents the regional and global productivity, income and nutritional impacts of CGIAR centres and NARS partners through their sustained efforts in crop germplasm improvement. The book has been widely circulated (182 copies distributed), to CGIAR members, CGIAR centre directors and board chairs and to a range of CGIAR stakeholders and friends. A summary of the main findings of this study was published by Evenson and Gollin in *Science* (“Assessing the Impact of the Green Revolution, 1960-2000,” *Science* 2 May, 2003).

Status: Study completed; no follow-up envisioned at this time.

2.2. Conference on Impacts of Agricultural Research and Development: Why has Impact Assessment Research not Made More of a Difference?

The main outcomes of this SPIA/iSC and CIMMYT sponsored conference, held in San Jose Costa Rica in February 2002, are reported in a summary of proceedings book which is in publication. With over 145 people attending, this conference was the largest gathering in CGIAR history of the international agricultural research IA community. The 4-day conference provided an opportunity for IA professionals to update their knowledge and skills in relation to both conceptual and empirical approaches to impact assessment while engaging in extensive discussion and networking. Participants highlighted experiences and case studies of impact measurement in the following areas: agricultural productivity; equity, poverty, social health, and nutrition; the environment; and, institutions and human capital. Participants also described novel approaches to hard-to-measure impacts in such areas as: training and capacity-building; institutional strengthening; networking; participatory research; and policy research.

In addition to the summary proceedings volume, the *Quarterly Journal of International Agriculture* is devoting an entire issue (Vol. 42/2) to “Assessing the Impacts of Agricultural Research: Theory and Evidence”, comprised of one set of papers presented at the Conference, including an introductory one co-authored by the SPIA Chair and Secretary together with P. Pingali and M. Morris. A second set of papers from the conference is being published in a special issue of *Agricultural Economics* (Vol. 29/2) “Returns to Investment in Plant Genetic Resource Conservation and Crop Improvement Research” and a third set of papers are being published in a special issue of *Agricultural Systems* on "Learning for the future: Innovative approaches to evaluation of agricultural research" (see Appendix I). SPIA was very pleased with the overall high quality of papers presented at the conference and later published in various fora and wishes to put on record its appreciation to both Prabhu Pingali and Michael Morris for their diligence and commitment to this effort.

Status: Activity completed; no follow-up envisioned at this time.

2.3. Environmental Impact Study

The second of two reports emanating from this study, "Environmental Impacts of the CGIAR: An Assessment" by Michael Nelson and Mywish Maredia, has been revised taking into account comments and concerns about data and methodology used in the earlier version. While some of the quantitative results have changed, i.e. are more conservative, the main findings have not changed: Contributions by the CGIAR in the areas of germplasm enhancement and agronomy have permitted significant yield increases in farmers' fields, thus leading to less land being required to produce a given quantity of food crops. At the time of this writing, the Panel report is with SPIA for final review. The other report by Mywish Maredia and Prabhu Pingali, addressing the negative impacts of productivity enhancing research and entitled "Environmental Impacts of Productivity-Enhancing Crop Research: A Critical Review", was published last year.

Status: Publication of Nelson & Maredia report after final review by SPIA members.

2.4. Impact of the CGIAR on Poverty Alleviation

Background

The first phase of this two-phase project, completed in 1999, involved a review and synthesis of the literature on the links between agricultural research and poverty and a workshop to develop methodologies for further CGIAR impact studies. The second phase, which began in September 2000, focuses on seven case studies involving a range of countries, different CGIAR centres and types of CGIAR research, e.g., in terms of commodity and regional coverage and scale of impact (see Table 1). These studies have two main objectives: (1) to test empirically methods for evaluating the impact of agricultural research on poverty in the context of different agricultural technologies and within different country, social, and institutional settings; and (2) to develop a conceptual framework that CGIAR centres can draw upon for impact assessment work, and that will also serve to guide priority-setting and technology design to increase the impacts on poverty. To accomplish these objectives, five of the first seven case studies used the sustainable livelihoods conceptual framework

The project is managed by IFPRI although each case study is led by a senior researcher (usually an economist) at the respective CGIAR centre, who works with senior social scientists (economists and sociologists) from national research institutes or universities and a team of less experienced social scientists for the purpose of capacity development. An External Advisory Committee (EAC) meets once a year (see previous SPIA Report for further elaboration and background to this project).

Table 1 - Wave 1 case studies of impact of agricultural research under the IFPRI/SPIA project

Country	Technology	Case study leader	Lead CGIAR centre
Bangladesh	Modern rice varieties	Mahabub Hussein	IRRI
Bangladesh	Polyculture fishponds Improved vegetables Modern rice varieties	Kelly Hallman	IFPRI
Kenya	Soil Fertility Replenishment	Frank Place	ICRAF
Zimbabwe	Modern maize varieties	John Hoddinott	IFPRI
Mexico	Creolized maize varieties	Mauricio Bellon	CIMMYT
China	Agr. research investments*	Shenggen Fan	IFPRI
India	Agr. research investments*	Shenggen Fan	IFPRI

* Uses econometric analysis of secondary data rather than sustainable livelihoods approach with integrated social and economic impact assessment

Recent progress

SPIA reported on the key developments of this project at the last CGIAR annual meeting in Manila (see SPIA Report to AGM '02). The following highlights the progress made since October 2002.

All draft final reports on the five case studies using the sustainable livelihoods framework have been submitted, and reviews completed for three case study reports. The Zimbabwe final report has been revised and the contract complete. Research results from three of the five studies and the synthesis were presented on a panel organized for the International Conference on "Staying Poor: Chronic Poverty and Development Policy", University of Manchester, Manchester, England, 7-9 April, 2003. A presentation on combining qualitative and quantitative methods to study vulnerability, using examples from the poverty impact case studies, was given at an IFPRI-World Bank Conference on Risk and Vulnerability: Estimation and Policy Implications. September 24, 2002. A retreat was held on December 4-5, 2002 with the four study managers to review study results and brainstorm for the synthesis report. This synthesis report is in progress. A workshop was held at IFPRI on February 4-6, 2003 on Institutional Learning and Change (see below), to develop ideas for ILAC follow-up for Wave 1 case studies, and for integrating ILAC into new poverty impact studies. A dissemination and communications strategy was developed, including timeline and budget.

Specific Study Update

Bangladesh (IRRI) study: Draft report has been completed and comments received from 2 of the 3 EAC members.

Bangladesh (IFPRI) study: Draft report has been completed and comments received from 1 of the 3 EAC members.

Zimbabwe (IFPRI) study: The draft long and short reports were revised, revisions approved and this contract is complete. The short report has been distributed in Zimbabwe to all participants in the original study planning stakeholder meeting held in February 2001.

Kenya (ICRAF) study: The draft long and short reports have completed, reviewed by the EAC, and revisions are underway.

Mexico (CIMMYT) study: The draft long and short reports have completed, reviewed by the EAC, and revisions are underway

China and India (IFPRI) studies: Analysis of the impact of sub-national level data in China and India has been extended to econometrically estimate the impact of agricultural research on urban poverty. Results indicate food price effects are large and that the benefits for the urban poor have been about as large as the benefits for the rural poor. Recent efforts were devoted to trace the parentage of some key crop varieties to calculate in approximate terms the contribution of the CG centres' own research to productivity growth and poverty reduction. In China, research benefits as a share of rice production value range from 25% to 30%. In India, they range from 33% to 40%. The benefits produced just from rice research are more than 10 times higher than the total agricultural research investment.

Workshop on Institutional Learning and Change (ILAC)

A proposal submitted to the Rockefeller Foundation for an international workshop on ILAC was funded, and the workshop held at IFPRI in early February 2003. The idea grew out of concerns for how results from our poverty impact studies would be incorporated into the learning processes of CGIAR centres. This workshop was attended by approximately 30 representatives from CGIAR centres, universities, research institutes, SPIA and the Rockefeller Foundation, including experts on ILAC and CG research managers and researchers interested in developing ILAC in their programs and projects. SPIA consultant David Raitzer presented a paper on "Institutional Learning in Impact Assessment: Lessons from SPIA's Benefit-Cost Meta-Analysis of the CGIAR". A new CG working group has formed to network on ILAC and a new proposal is underway for advancing ILAC in the CGIAR, and for the new case studies. While IFPRI originated this initiative and got it off the ground, it was decided at the workshop that ISNAR would be the appropriate coordinating institute for taking it forward. However, given the uncertainties at ISNAR presently, it might be advisable for IFPRI to continue these activities for the time being.

Planned Modifications to Project Implementation

A new outreach and communications strategy has been developed. This is detailed in the attached document: "Assessing the Poverty Impacts of Agricultural Technology: Proposed

Synthesis and Communication Activities and Workplan for April 1, 2003-March 31, 2004.” (Appendix II).

Dissemination Outputs

Articles published:

- Adato, M. and R. Meinzen-Dick. 2003. “Assessing the Impact of Agricultural Research on Poverty and Livelihoods,” *Quarterly Journal of International Agriculture*, Vol. 42, No. 2.
- Fan, Shenggen, Cheng Fang, and Xiaobo Zhang. 2003. “How Agricultural Research Affect Urban Poverty in Developing Countries: The Case of China.” *World Development*, March.
- Fan, Shenggen. 2003. “Agricultural Research and Urban Poverty in India,” *Quarterly Journal of International Agriculture*, 42, No. 1: 63-78.
- Fan, Shenggen, Linxiu Zhang, and Xiaobo Zhang, 2002. *Growth, Inequality, and Poverty in Rural China: The Role of Public Investment*, IFPRI Research Report 125, International Food Policy Research Institute. Washington D.C.

Conference papers:

The following papers were presented at the International Conference on Staying Poor: Chronic Poverty and Development Policy, University of Manchester, Manchester, England, 7-9 April, 2003.

- Hazell, P., L. Haddad, M. Adato and R. Meinzen-Dick. 2003. The Impact of Agricultural Research on Poverty Reduction: Overview and Synthesis of Findings.
- Lewis, D., K. Hallman, and S. Begum. 2003. Improved Vegetables, Fishpond Technologies and Livelihoods in Bangladesh.
- Bellon, M., M. Adato, J. Becerril and D. Mindek. 2003. The Impact of Improved Maize Germplasm on Poverty Alleviation: The Case of Tuxpeño-Derived Material in Mexico.
- Place, F., M. Omosa and P. Hebinck. 2003. Chronic Poverty in Rural Western Kenya: Its Identification and Implications for Agricultural Development.

The following conference presentation was made:

- Adato, M. and R. Meinzen-Dick. “Integrating Quantitative and Qualitative Methods to Study Vulnerability.” Presentation at the IFPRI-World Bank Conference on Risk and Vulnerability: Estimation and Policy Implications. IFPRI, Washington, D.C., September 24, 2002.

Status: Tentative final set of dissemination/outreach activities proposed.

2.5. Training Evaluation and Impact Assessment

The study of Evaluation and Impact Assessment of Training activities in the CGIAR is now proceeding to the Main Phase. The Main Study will be carried out by a small Panel consisting of Chair and 2 members. In addition, regional resource persons will be contracted to assist in field surveys. The outline of the study plan is presented in the Terms of Reference to the Panel, approved by iSC and SPIA (Appendix III). The TOR also includes a proposal for the study design.

The iSC and SPIA have approved the short list of candidates for the Panel Chair and members. The first ranked Chair candidates have been approached to ascertain their interest and availability but no appointment has yet been made. A ranked list of Panel member candidates will be finalised in communication with the appointed Chair from the approved list. The iSC Secretariat accumulated names for selecting regional resource persons during the stakeholder consultation in the autumn of 2002. The Panel member list also serves for this purpose.

The Desk Study which will provide data and information for the Main Study is near completion. The draft report will be presented to iSC and SPIA members in the June meeting. Training data are still arriving or have been requested from 3 Centres and a short term consultant has been employed to complete the summary and analysis of individual Centre data, and the data at System level.

Status: Desk study nearly completed; main study initiated.

2.6. CGIAR Benefit - Cost (B-C) Meta-Analysis

Background

Since establishment in 1971, the CGIAR has invested some US \$ 7 billion in various research and research related activities. In an era characterised by “donor fatigue” and scarce development resources, it is appropriate to ask: *Do the benefits from CGIAR research justify the total investment in the CGIAR so far?* This study proposes to resolve on a preliminary basis whether the *entire* investment in the CGIAR over time can be justified on the basis of the benefits derived from its proven (and agreed-upon) major successes. One reason for the possible failure of prior impact analyses to offer very convincing evidence for continued donor interest is the criticism that such assessments have focused on the costs and benefits only of research successes, while ignoring the costs of failures or “dry holes.” The present analysis offers an answer to such criticism by compiling reliable estimates of widely recognized benefits, and comparing such against the total investment in the System to date. Such an approach has already proven successful for other agencies and entities. While the CGIAR has been long considered a driving force behind the success of the Green Revolution, no prior study has attempted to develop an aggregate estimate of the value of the System’s impacts.

Activities and Methodological Approach

Working under the guidance of the SPIA chair and secretary, a consultant was hired from July to November 2002 to undertake the major part of the meta-analysis. Prior to actually deriving aggregate benefit estimates under different benefit-cost scenarios, a number of preliminary steps were required. This involved: surveying the literature for studies to be included in the aggregate analysis; determining an overall framework for review; developing specific criteria upon which to assess credibility; creating the database for documenting critical assumptions of reviewed analyses; critically reviewing the selected benefit studies; and, compiling, aggregating, deflating and appropriately discounting benefit values reported in the reviewed studies.

Economic impact studies for inclusion in the meta-analysis were selected based on a literature survey of publications databases, examination of reference lists from prior studies,

and scrutiny of centre publications. Since impact assessment has been pursued in a largely decentralised manner, standards and approaches differ significantly among studies, and, hence, a critical review process was necessary for determining the reliability of generated results. To develop the conceptual grounding for such, best practices were identified for economic impact assessments.

Two overarching principles for evaluating study reliability- transparency and demonstration of causality, as well as accordant criteria and indicators were developed from the identified best practices. Transparency was represented by three criteria: 1) clearly derived key assumptions, 2) comprehensive description of data sources, and 3) full explanation of data treatment. Demonstration of causality was represented by five criteria: 1) representative data set utilised, 2) appropriate disaggregation, 3) adequate consideration of mitigating factors, 4) plausible counterfactual developed, and 5) precise institutional attribution.

Using these criteria, five benefits scenarios were developed. These scenarios include 1) a scenario only including highly-rated studies that empirically attribute benefits to specific activities of the CGIAR, rather than arbitrarily partitioning benefits from efforts in collaboration with partners, 2) a conservative scenario of only highly rated “significantly demonstrated” studies, 3) a selection of “plausible” studies meeting minimum standards for the criteria described above, 4) a “plausible, extrapolated to the present” scenario in which benefits for the crop genetic improvement studies are assumed to continue from the study period to the present and 5) a “plausible, extrapolated to 2011,” which assumes that the products of current research will continue to be realised at present rates until 2011.

Summary of Major Results

Against an aggregate investment of 7.1 billion 1990 US dollars (inclusive of relevant pre-CGIAR costs), all scenarios produced benefit-cost ratios in excess of one, indicating investment efficacy. Including only “significantly demonstrated” studies that empirically attribute CGIAR derived contributions to collaborative efforts, results in a ratio of 1.94, while if all “significantly demonstrated” studies are considered, with assumed attributive coefficients applied, the ratio rises to 3.76. The “plausible” scenario results in a ratio of 4.74, while when extrapolated to the present, this rises to 8.98, and extrapolated to 2011, this becomes 17.24. Since costs were distributed over the benefit period, and many benefits peaked in the early 1990s, the discount rate applied only significantly affected generated ratios in the extrapolative scenarios.

The true value of benefits arising from the CGIAR is probably in excess of even the upper bounds of the results demonstrated here, as only a small subset of CG derived impacts have been assessed. To illustrate this point, 98.5% of “significantly demonstrated” and 93.8% of “plausible” benefits were generated by just three research areas – cassava mealybug biocontrol, breeding of spring bread wheat, and modern varieties of rice. Non-economic impact studies illustrate that these are not the only areas of CGIAR research success, so there is substantial scope for expanded impact coverage, and better illustration of how CG activities influence target beneficiaries. Furthermore, even where economically assessed there still remain significant opportunities for improving the methodological rigour, comprehensiveness, and transparency of System assessments.

Finally, the diversity of methods employed among centres and research programmes appears to indicate that more guidance on best practices for ex-post impact assessments within the System would offer considerable potential to improve consistency and raise analytical standards. However, for this to be effective, it will be necessary for the “clients” of impact assessments to articulate expectations for substantiating different types of impact claims. In the absence of such, it is difficult to select one of the six scenarios as most “accurate,” and the “true” benefit-cost ratio of the CGIAR investment will remain unresolved.

Final Report

A first draft report of the study produced by the consultant was circulated to SPIA members in December 2002. Working closely with the SPIA chair and secretary, the consultant incorporated most of these comments into a revised draft report, which was subsequently sent out for review to six external referees—knowledgeable experts in the field of impact assessment. The full sets of reviewers’ comments were considered by both the consultant and the SPIA chair and were taken into account in developing the third draft (current version) of the report. The draft report has been circulated to iSC members for discussion at iSC 84, after which it is expected the report will be published.

Future work

A second phase is envisioned at some future time. It would move the study beyond the wide range of plausible estimates developed in the preliminary analysis to 'zero in' on a more precise benefit range. This will require more extensive interaction with authors of the reviewed CGIAR impact studies and establishing a greater degree of consensus from investors as to their expectations regarding ex-post IA. For the purposes of eliciting client opinions of different scenarios, studies and standards, and using these as a basis for further analysis, a workshop is planned later in the year (early October or mid November) in which participating donors would be asked to present short summaries of content, strengths, weaknesses, and points for improvement of a specific CGIAR ex post IA study. This would help articulate in clearer and more definitive terms the needs and expectations of one of the primary users of ex post IA studies. Patterns of expectations evident in the conference would be distilled into minimum IA standards broadly acceptable to IA audiences. Once standards are established the studies reviewed would be re-visited along with additional and/or revised IA studies the IARCs submit for inclusion. The resulting aggregate benefit values would be implicitly acceptable to main IA audiences and insights from the critical review could provide a strong basis for the Strategic Guidelines document (see below). Depending upon the results of Phase II, a third phase may be proposed, to facilitate new analyses of significant impacts lacking precise assessment.

The major outputs of Phase II therefore would be a workshop in which focused dialogue is established among impact assessors and intended audiences so that clients of IA research articulate minimum standards for impact claims and a secondary analysis and report of the aggregate benefit ranges produced in the light of these elicited expectations. Peer reviewed journal papers and short briefs specifically targeting donors' needs will also be produced.

Status: Phase I nearly completed; Phase II under consideration.

2.7 Strategic Guidelines for IA in the System

Background

The need for establishing strategic guidelines for IA studies in the CGIAR has been re-enforced at the last two major CGIAR sponsored IA conferences. Strategic guidelines are not a detailed step-wise 'how to' manual for carrying out IAs, but rather a set of basic principles and discussion of strategic issues, including user needs, for IA in the System. The guidelines would cover issues that help link what users of IAs need (donors, planners, administrators) with what doers of IAs can provide, given resource, and time and data constraints. It would explore basic issues such as the criterion of plausibility in IAs, attribution, development of counterfactuals, logframe and impact pathways analysis generally, and issues related to credibility, feasibility, transparency, and communication. Donors are keenly supportive of developing this set of guidelines, since they believe that such a document also would be helpful to them in establishing internal guidelines for judging IAs and explaining them to funding and political bodies.

Activity to-date

Last year SPIA developed a preliminary annotated outline for the Guidelines. The draft outline was subsequently revised (see Appendix xxx) following a number of helpful comments and suggestions from selected individuals, including iSC members, and some interested donors. EIARD members and USAID, in particular, are quite interested and supportive of this work and are expected to be close partners in developing these guidelines, along with CGIAR Centres. The major output from this activity will be a set of principles and 'best practices' strategies to guide ex-post impact assessment (epIA) work done by the CGIAR and its centres.

Future Work

Although initially a consultant was to be hired to help draft and finalise the guidelines, in collaboration with SPIA members and a range of stakeholders, it is now felt that this activity could benefit substantially from, and thus should be closely integrated with Phase II of the B-C Meta-Analysis and, of considerable relevance to the NRM epIA activities which have just been initiated. Accordingly, hiring of a consultant to help finalise the guidelines will be deferred until later in the year. In collaboration with CIFOR, SPIA is developing and will soon send out a survey questionnaire to CGIAR members and other stakeholders in an effort to better understand donor views about the major purpose(s) of and demand for ex post impact assessments in the CGIAR. David Raitzer will be tabulating and analysing responses for SPIA. Consideration is also being given to organizing a very small workshop with selected centre IA focal points and key donors (probably in early 2004) at which time draft

guidelines could be presented and subsequently modified prior to finalisation. Of particular relevance to this study is a mini-symposium being held at the IAAE meetings in Durban in August to discuss issues related to defining epIA ‘best practices’, at which the SPIA Secretary and Chair have been invited to present a paper.

Status: On-going. Preparation of paper identifying key issues in relation to ‘best practices’ in epIA, and distribution to CGIAR members of the survey intended to elicit donor views about ex-post impact assessment.

2.8 Impact Assessment of NRM Research in the CGIAR

Background

Early in 2003, the CGIAR Director asked SPIA/iSC to initiate a connected set of activities that would eventually give donors a better idea of the impacts of their past investments in natural resources management (NRM) research in the CGIAR. The need for this initiative derived mainly, but not entirely, from the recent World Bank/OED meta analysis of the CGIAR and its conclusion that there was a serious dearth of quantitative evidence on the impacts of NRM research in the CGIAR. While centres have undertaken a number of evaluations of NRM activities, not many have gone beyond a description of outputs and analysis of adoption in some cases. Much more evidence of impact from a wide variety of NRM research is needed.

Workplan and approach

After several rounds of discussion involving iSC members, the CGIAR Director and several centre DGs, SPIA developed a NRM IA activity workplan and budget for this study (see Appendix IV). The workplan covers three main activities in this initiative to understand better the impacts of past investment in CGIAR research related to NRM. The three activities are:

1. Development of improved methods for assessing NRM impacts;
2. Empirical evidence of impacts from centre activities; and
3. Empirical evidence of impacts from Systemwide activities.

Ideally, activity 1 would be undertaken prior to the other two. However, due to the urgency of gaining a better perspective on the actual impacts of CGIAR activities in this area, it is proposed that the first two activities be undertaken simultaneously and immediately. The third, which is being planned jointly SCOER, is targeted for implementation toward the latter part of the year.

SPIA will act as the main implementing body for these activities, although centre input will be essential to the successful completion of the activities, and particularly for activity 2, which will have centre input in developing an operational plan of action.

It is stressed that this initiative is focused on ex-post impact assessment (henceforth referred to as “epIA” to distinguish it from all the other analytical exercises ongoing in the centres related to NRM and INRM). The resources provided to SPIA and the centres to undertake this initiative are a direct response to CGIAR investor interest in understanding better the impacts of their past investments in NRM research in the CGIAR.

Specific activities

For Activity 1, SPIA is in the process of recruiting an expert in the area of NRM epIA as a consultant to develop a basic background paper on state of the art in NRM epIA. At the same time, the SPIA Chair has asked the CDC Task Force on Integrated NRM to prepare its collective thoughts on the subject and provide a review of the state of the art in the CGIAR System. Both papers would be reviewed widely and would be the centrepieces of a SPIA facilitated workshop to identify the elements needed in strategic, “best practice” guidelines (as distinct from a “how to” set of operational guidelines) for use in the CGIAR. The consultant, working with SPIA and the CDC Task Force and centre IA experts, would then develop the draft set of strategic guidelines for doing NRM epIA in the CGIAR for review by the centres and eventual adoption and use within the System.

Activity 2 involves a set of case study assessments of the impacts of selected centre NRM projects/activities. SPIA will be providing resources and oversight for selected centres to undertake credible empirical assessments of the impacts of selected NRM activities or projects in the context of the CGIAR mission and goals. The CGIAR has approved grants of \$30K per centre for five centres to produce these assessments. (Note, these could, if deemed suitable, link to the centre case studies on INRM research currently being prepared by the CGIAR Task Force on INRM and the iSC, however, the two sets will not necessarily be the same.)

In mid April, the SPIA Chair asked centres that were interested to submit brief proposals for case studies to SPIA by 1 June 2003. Centres were encouraged to present NRM research where the results have gone on to extension, adoption and development phases at least 5 – 10 years ago. Specific criteria for selection of the proposals were provided (see Appendix V). SPIA will assess all the proposals and pick five to move ahead with during this first round (a second round will be proposed, pending results from the first round cases). In terms of overall dimensions of the cases, SPIA would like to have the cases represent NRM activities at both the NRM and/or policy focused centres and at the commodity/regionally focused centres with significant complementary NRM activity. Centres selected will be notified of their acceptance by the end of June and funds transferred accordingly. Cases will be undertaken during the period July, 2003, to January 30, 2004 and cases will be due with SPIA in advanced draft form by 15 February, 2004. SPIA will have the cases peer reviewed during the period February-March, 2004, and the reviews will be returned to the centres for finalization, with the final drafts being returned to SPIA by end of May, 2004. The cases will be published with an accompanying foreword and introduction by SPIA, in time for AGM04. It is envisioned that SPIA, through the hired consultant working with the centres (see Activity 1), oversees the cases much in the same way that SPIA, using Drs. Evenson and Gollin, carried out its oversight function of individual centre crop studies in the case of the recently completed assessment of the impacts of CGIAR CGI research.

Activity 3 is an assessment of the impacts associated with one of the longest running Systemwide programs that focus primarily on NRM activities (mainly through the eco-regional programs). Although the iSC did a “mini-evaluation” of the Systemwide programmes with an eco-regional focus, the evaluation was preliminary and did not include assessing of the impacts of such programmes. The present activity will assess the impacts of the ASB programme as well as performing a more thorough evaluation of performance. In order to ensure effectiveness and efficiency in the use of CGIAR funds, the impact assessment

would be carried out jointly with a more traditional iSC type of program evaluation. At this stage, SCOER and SPIA are in the early planning stages for developing TOR and identifying candidates for panel chair and members.

Status: Just initiated; on-going until AGM '04

2.9 CGIAR Impact in Africa Study Follow-up [Planning Stage]

Background

While the positive impacts of agricultural research done by the CGIAR and its partners in Asia and Latin America have been well documented (e.g., Evenson study on CGI impacts), the impact of CGIAR work in Africa is less apparent, and poorly documented. At MTM 01, SPIA/TAC presented the available information on the contributions of the CGIAR, working with its partners in Africa and elsewhere, has made to agricultural development in Africa. The paper was well received, but the review was a preliminary one, not complete, and in many cases relied on anecdotal information for its assessment.

Work Planned

This initiative would build on the initial assessment presented at MTM '01 to develop a more systematic and comprehensive assessment of the impacts of the CGIAR and its partners in achieving the goals of reducing poverty, hunger and malnutrition in Africa. A consultant will be hired by SPIA to work closely with the Centres in compiling and synthesizing the available evidence of CGIAR research impacts in Africa.

In addition to completing a more comprehensive desk study, there may be scope for SPIA to become involved in a new initiative to assess impacts of five or six CGIAR Centres in about eight specific locations/projects in Africa. The major focus of this initiative is on community level processes of who adopts, where and why, and improved understanding at the household level of what impacts are being generated by new technologies. Major funding for completing the first round of detailed baseline surveys and preliminary and final workshops will come from the Japanese Foundation for Advanced Studies (FASID), but additional support for operational expenses and the second round of surveys is required. On an informal basis, the SPIA Chair and Secretary have been interacting with the project coordinator, Frank Place (ICRAF) and have provided detailed comments on the scope, objectives, methods as defined in earlier drafts of the project proposal. SPIA should keep a watching brief on developments within this well designed but fairly ambitious project and, may at some point, consider greater involvement with some financial support.

Expected Outputs

The major output from this activity is an updating and extension of the work presented at MTM '01 seeking to document the improved technology and policy impacts of CGIAR and partner agricultural research in sub-Saharan Africa. The analysis would rely on two sets of information and data: that based on field-level impact evidence from various case studies and more systematic CGIAR centre and System level assessments. Another key output, derived from the FASID supported study, would be a longitudinal dataset over an extended number of years. This will be extremely valuable in capturing a better understanding of the linkages between agricultural research and poverty alleviation.

Status: No resources have been available to initiate this activity beyond dialogue with and providing advice to FASID project coordinators.

(Support for CGIAR Impact in Africa follow-up assessment: approx. \$30,000; Support for FASID study: open-ended – requires another \$300,000 for next 3 years)

2.10 CGIAR Impact Website and Database Development [Planning Stage]

Background

The 16 CGIAR Centres share a mandate to increase agricultural productivity in developing countries, alleviate poverty, and enhance the sustainability of the natural resource base on which agriculture depends. Successful achievement of this shared mandate depends on the ability of each of the Centres to identify appropriate research priorities, effectively manage ongoing research, adequately account for resources invested in research and development activities, and build and maintain public support for international agricultural research. The success of these activities is critically influenced by the quantity and quality of the impact assessment (IA) research carried out by the Centres. It is important that the CGIAR establish an effective mechanism to promote “best practices” in IA research, disseminate IA research results, and foster dialogue between IA practitioners, both within the CGIAR and throughout the larger research and development communities. The Centres additionally need to improve their ability to learn from experience and to demonstrate to donors, partners, and intended beneficiaries that they are committed to using the results of IA research for organizational learning purposes. Amongst key stakeholders in the CGIAR, and particularly within the Centres, there is widespread interest in and support for developing a CGIAR Impacts website.

Description of Work Planned

The website interface (structure and functions) will be developed following consultation with stakeholders and potential users, including IA practitioners, scientists and research managers, and professional communicators. IT specialists and website designers will provide guidance on design and technical implementation issues. The website would be managed by SPIA and technically operated by one of the Centres. CIMMYT was proposed initially, since they have considerable experience and capacity.

Major Outputs Expected

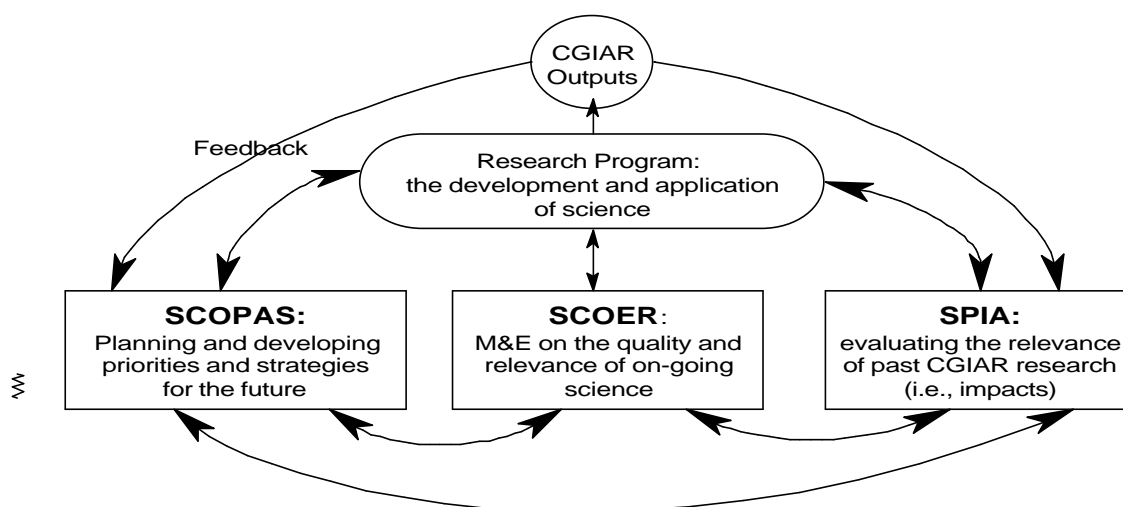
At full development the website would have five functions: (a) serve as a central focal point for IAs in the System, (b) provide general awareness for investors and the public through provision of one page summaries of IAs and synthesis documents; (c) include full versions of peer reviewed IAs (or links to); (d) be a depository of data that could be used in a variety of IA activities; and (e) provide an interactive mechanisms for those involved in IA inside and outside the system. In addition, the website will provide links to a wide range of resources, including: descriptions of “best practices” in IA research; comprehensive bibliography of IA literature; noteworthy results generated by IA research; database of statistical indicators used by IA practitioners; photographic and video images of agricultural research and their impacts; bulletin board/discussion room facilities; directory of IA practitioners; calendar of upcoming events of interest to the IA community; and, list serve facility.

Status: No resources have been available to initiate this activity beyond the planning phase.
(*Budget req'd: \$ 75,000 first year (post doc, web design consultant)*)

3. FUTURE OF IMPACT ASSESSMENT ACTIVITY IN THE CGIAR

3.1 Context

The CGIAR members and the Cosponsors decided at MTM '99 in Beijing that the Systemwide IA function (previously carried out by the independent IAEG) should be integrated with the work of TAC in order to gain efficiency and take advantage of the synergies with the System's forward planning and its monitoring and evaluation functions, both of which were housed in TAC (See figure below). Thus, close and regular linkages between the three functions are considered essential. In fact, SCOER and SPIA currently have several joint studies underway.



The need for closer integration was confirmed by the 2001 SC working group in its recommendations on the SC. It has now been further confirmed by the Group in its endorsement of the 2002 SC working group proposing the structure and functions of the new Science Council. However, under the new SPIA-SC relationship, (a) the SPIA chair will be appointed by the SC chair and members chosen by the SC chair; and (b) the SPIA chair will not be an ex officio member of the SC.

SPIA has confirmed that the three functions of (i) forward planning, (ii) monitoring and evaluation (M&E), and (iii) ex-post IA should be closely associated so that each can build on synergies and complementarities with the others. At the same time, SPIA is sensitive to the wish of the Group that the IA function should retain its independence and transparency and, hence, credibility. The new arrangements for selecting the SPIA chair and members and reporting directly to the SC raise some concern about the degree of independence that might be possible. There is need to debate further the independence issue.

Moving ahead to optimize the contributions of science to achieving the goals of the System requires an iterative process of successive approximations as new results emerge, as new science evolves, and as the evolving issues are understood better. In this process, planning requires learning from the present progress (through M&E) and from the impacts of

past activity. At the same time, evaluation of the relative effectiveness of on-going activity, and assessment of the impacts of past application of science requires knowledge of what has happened, what is happening now, and what likely will and should happen in the future, i.e., the context. Thus, close and regular linkages between the three functions are essential.

The System, in its systemwide IA activities, initially through the IAEG and presently through SPIA as part of the iSC, has focused mostly on major cross-centre impact assessments. Thus, there have been assessments of the System's germplasm improvement impacts (Evenson et al. report), environmental impacts (Nelson and Maredia and Maredia and Pingali reports), and IPM activities (Waibel report). On-going SPIA/iSC assessments are focusing on the CGIAR's impacts on poverty alleviation, the impacts of the System's capacity strengthening activities, the impacts of NRM research, and the overall relationship between the entire System's costs and its impacts on or benefits to society. In addition, there have been various information and support functions carried out over the past years, including several workshops for centres to consider where the system and its centres should be going in the field of IA, the specific role of IA in generating fundamental lessons about how research is designed and for whom, and an international conference, bringing together CGIAR investors and IA users with specialists from the centres and from outside the System to focus on how IA can generally be used more effectively.

3.2 Key Impact Assessment Needs of the System

Within this broader context of CGIAR forward planning, monitoring and evaluation of on-going programs, and accountability to investors for past use of their resources, the iSC has on several occasions confirmed its belief that the System still needs:

- (a) evidence of the impacts of its various completed and on-going Systemwide programs and related activities;
- (b) impact information useful in understanding appropriate and desirable changes in direction of the System's programs;
- (c) mechanisms for strengthening the capacity to do impact assessment in the System's centres; and
- (d) to support centres in the further development of their "impact cultures," or focus in the Centres and their partners on impact pathways and ultimate impacts of their research and related activities.

Given these basic system level needs, SPIA concludes that there is a continuing need for four main ex post impact assessment functions at the System level within the CGIAR's impact assessment unit. These include:

- (1) **Conducting high quality, independent impact assessments** to provide results useful to (a) investors, in justifying their investments; and (b) System management and centres in planning their programs and investments and developing and allocating budgets. (Independence here refers to being done by individuals not associated with the research being assessed and having no conflicts of interest that could affect the assessment).
- (2) **Tracking information** related to the impacts associated with centre and cross centre activities. This could involve routine data collection; and developing, maintaining and managing, in collaboration with the planning and monitoring and evaluation units, an appropriate data base/MIS for the System that would provide annual updates on

accomplishments (training, research, etc.) in addition to data on other indicators of relevance in understanding the impacts of the System's outputs and processes.

- (3) ***Developing methodologies, providing training in their use, and providing advice and facilitation for centres as needed***, e.g., in terms of setting up programs and projects in such a way as to make tracking and analyzing impacts more feasible, transparent and of high quality.¹ This would include the “certification” of quality of internal IAs and organizing and “certifying” quality of external IAs. Ideally, this function would involve the establishment and maintenance of a CGIAR wide IA web site that also would be open to all outside entities with an interest and involvement in IA related to agricultural research and training.
- (4) ***Delivering and facilitating the most effective use of the outputs of the IA entity***, e.g., facilitating centre interaction and learning, and developing an effective impact culture in the centres. It also would involve providing insights to investors on what is and is not feasible in terms of carrying out IAs for such activities as natural resources management, social science research and capacity strengthening.

To carry out the four functions described, SPIA concludes, based on a review of past Systemwide IA activity and experience, that five key areas of collaboration and cooperation will need to be targeted more effectively in the future. These relate to:

- (1) Working more closely with centres through collaborative and cooperative activities;
- (2) working more closely with the System's science monitoring and evaluation activities to ensure that the complementarities between IA and M&E are fully realized; (in fact, SPIA and SCOER have carried out a number of joint activities);
- (3) working more closely with the forward looking, system level planning activities, including particularly in monitoring the evolving challenge program experience;
- (4) opening up more broadly to the IA world outside the CGIAR, through networking, a web site, outsourcing and putting some future assessments out for bid on a broader “request for proposal” basis; and
- (5) setting standards and helping develop a more systematic process to assure high quality, independent scientific peer review of the analytical ex-post IA studies produced by SPIA and the centres.

3.3. Transition: Activities in the Pipeline

Given this overall context of necessary functions and the targeting of collaborative arrangements needed to make an impact assessment unit more effective and efficient in meeting CGIAR needs, it also has to be recognized that a smooth and active transition to the new Science Council's impact assessment program requires consideration of what has gone on in the past. In this regard, the iSC also considered and endorsed, at iSC83, the portfolio of on-going SPIA activities and the approaches to bringing them to completion. The major ones included (as described in Section 2):

¹ It should be stressed that the implication of this statement is not that the centres are lacking in high quality impact assessment capacity. Rather, the thinking here is that a central entity can facilitate interaction among centres, gain access with System level resources to expertise needed by all centres, and provide a clearing house for information and documentation of use to all centres. In a sense, this central entity will provide “System level public goods.”

1. The **proceedings of the SPIA/CIMMYT international conference on impact assessment** held in Costa Rica in February of 2002 (*Now completed*).
2. An assessment of the **impacts of the CGIAR on poverty** and the strengthening of capacity in the CGIAR centres to do work in this area.
3. A stripe review of the **impacts on NARS of CGIAR training** activities (joint with SCOER/iSC).
4. A meta **analysis of the costs and benefits associated with the entire CGIAR portfolio of investments** since its inception.
5. Developing **strategic guidelines for conducting impact assessments** in the CGIAR.

In addition, SPIA/iSC, in early 2003 was invited by the CGIAR Director to launch a major initiative aimed at assessing the poverty alleviation and sustainability **impacts of NRM research in the CGIAR**. This is now a priority activity of the SPIA/iSC and is likely to remain on its agenda until late 2004.

It is fully the intention of SPIA to continue these activities and to the extent possible bring all of these (except the NRM research impact study) to completion prior to early next year or no later than the middle of 2004. Progress reports on each activity have been presented in Section 2. These include the needed and intended future work, as well as comments on the resources constraints standing in the way of successful completion of several activities.

After iSC83 (August of 2002) and the AGM '03 meeting in Manila, the SPIA/iSC considered an indicative portfolio of planned activities for the future, assessments worth undertaking, but not yet started. At the present time, the intention is to pass this list, and background analyses where available, on to the new Science Council for its consideration. In this regard, the following activities, not necessarily in order of priority, might productively be considered by the new SPIA and the Group over the next few years:

- A follow up study of the **impacts of the CGIAR in Africa (described in Section 2.9)**.
- A CGIAR wide **impact assessment website (described in Section 2.10)**.
- Assess the **impacts of the Alternatives to Slash and Burn (ASB)** program; the ASB is one of the CGIAR's most advanced systemwide programmes (SWPs). It offers good potential for evaluation and assessment of its impacts in terms of CGIAR goals. Although evaluated earlier along with 7 other ecoregional SWPs in the context of the TAC/iSC Ecoregional SWP review, the proposed study will be more in depth and specifically assess impacts, as well as standards of relevance and quality of science. The study would be jointly organized with the science monitoring and evaluation group within the SC.
- Assess the **impacts of the CGIAR in Latin America and in Asia**; these would be parallel studies to one described above for Africa.
- Develop and apply IA methods for **participatory research/breeding** (specific assessments of activities of course should be done through the partners involved in the activities).
- Continue and expand the assessment of the **impacts of the capacity strengthening activities** of the System, extending out from the on-going assessment of training to other types of capacity strengthening activities in the System and to field work involving systematic collection of lessons learnt from those who have been trained and the NARS groups in which they work.

- Participate with IFPRI and others in bringing **poverty impact assessment and “institutional learning and change” (ILAC) strategies and approaches** more into the mainstream of centres’ activities.
- Initiate assessment of **policy research impacts** across the System, working closely with centres and consortia dealing with this topic; this includes actively supporting and participating in a **new consortium** dealing with assessment of the impacts of policy-oriented social science research (POSSR). (An international consortium of researchers and other professionals interested in measuring and enhancing the impacts of Policy-Oriented Social Science Research was agreed upon at a workshop, hosted by the Government of the Netherlands and organized by IFPRI. The SPIA attended the meeting. SPIA members should be actively involved in the early development of this consortium and stay actively involved as it develops).
- Look at the impacts of the System’s **biodiversity activities**.
- **Follow up on the Evenson/Gollin work on CGI impacts**, perhaps (a) doing a single crop more in depth; (b) looking at other crops; or (c) assessing impacts in one region/country in more detail, e.g., Latin America or South Asia.

In most of the cases listed, preliminary discussions and activities were started during late 2001 or the first part of 2002 in order to get stakeholder input. However, SPIA would welcome comments from iSC members on any and all of these activities. All these activities are considered important ones in the minds of various groups of stakeholders. They should help in moving CGIAR understanding of Systemwide impacts ahead and in terms of providing the Science Council, Executive Council and the System Office with insights to use in planning for the future of the CGIAR.

3.4. Concluding Comment

SPIA continues to see IA as a central function of the new SC, in agreement with the decisions of the members at AGM02. The synergies between the overall mandate and the functions needed to guard the quality as well as the relevance of science are strong. Understanding impacts of past activity provides central input for planning how to improve the efficiency, effectiveness, quality and relevance of on going and future science in the CGIAR System.

Now that the process of change to a new SC has been decided, there is an urgent need to continue and expand an active set of major systemwide assessment activities that can provide the CGIAR and its stakeholders with new perspectives on the major impacts derived from investments in the System. As indicated in the section above, a number of such activities already have been thought through and initiated by SPIA.

***SPECIAL ISSUE OF QUARTERLY JOURNAL OF INTERNATIONAL
AGRICULTURE***

“ASSESSING THE IMPACT OF AGRICULTURAL RESEARCH”

Guest editors

Michael Morris and Prabhu Pingali

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**LEARNING FOR THE FUTURE: INNOVATIVE APPROACHES TO EVALUATING
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A SPECIAL ISSUE OF *AGRICULTURAL SYSTEMS* FORTHCOMING IN 2003

Edited by Douglas Horton and Ronald Mackay

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**Assessing the Poverty Impacts of Agricultural Technology:
Proposed Synthesis and Communication Activities and Workplan
for April 1, 2003-March 31, 2004**

April 2003

International Food Policy Research Institute
2033 K Street, N.W. Washington D.C. 20006
USA

1. Introduction

This document summarizes the final phase of the IFPRI-coordinated project designed to assess the poverty impacts of agricultural technology, and in the process developing methods for integrating economic and social perspectives for the conceptualization of poverty and the assessment of the impact of agricultural technology on poverty. The technical work is nearing completion, and the project is entering the full-blown communication and synthesis phase.

2. The State of Play

To date, the first drafts of the seven case-studies have been completed. They are in various stages of revision as indicated in Table 1 below.

Table 1: Summary of Progress in the seven case-studies

Case-Study	Comments received from	Status
Zimbabwe-CIMMYT	Chambers, Behrman, Bebbington, Meinzen-Dick	Revised and accepted
Bangladesh-IRRI	Bebbington, Haddad, Meinzen-Dick	Waiting for comments from Behrman and Chambers before responding
Bangladesh-ICLARM	Bebbington, Haddad, Meinzen-Dick	Waiting for comments from Behrman and Chambers before responding
Kenya-ICRAF	Chambers, Behrman, Bebbington, Haddad, Meinzen-Dick	Waiting for Place and Hebbink to respond
Mexico-CIMMYT	Chambers, Behrman, Haddad, Bebbington, Meinzen-Dick	Waiting for Bellon and Adato to respond
India-IFPRI	Several—from journals, IFPRI's Publications Review Committee	Several papers produced-need a summary synthesis comparing rural and urban experiences
China-IFPRI	Several—from journals, IFPRI's Publications Review Committee	Several papers produced-need a summary synthesis comparing rural and urban experiences

Work has also begun on the Synthesis document (by Adato, Meinzen-Dick, Haddad and Hazell), the first draft of which is scheduled for completion by May 31.

3. The Communications Strategy

Communication activities have been undertaken throughout the life of the project (e.g. the CGIAR Annual General Meetings (AGM) in October 2001 and the CIMMYT Impact Assessment Conference in March 2002). The current phase of the project, however, will see an intensification of these efforts.

3.1 Conference Presentations

Presentations will be undertaken at the major meetings as outlined in Table 2.

Table 2: Venues for Conference Dissemination

Date, Location	Presenter	Audience
Chronic Poverty Conference, Manchester, UK, April 2003	Meinzen-Dick	Mainstream economists and some social scientists
International Agricultural Economics Association Conference, Durban, South Africa, August 2003	Haddad	International Agricultural Economics, Southern African policymakers, donors
IFAD, Rome, September 2003	Meinzen-Dick	Rome-based UN Agencies, International NGOS
CGIAR AGM, Washington D.C., October 2003	Adato, Meinzen-Dick, Haddad	CGIAR stakeholders
Joint USAID, World Bank, IDB meeting Washington D.C. November 2003	Adato, Meinzen-Dick, Haddad	Development banks, agencies, technical staff
IFPRI Policy Seminar	Adato, Meinzen-Dick, Haddad	Washington development community
DFID, London February 2004	Adato, Meinzen-Dick, Haddad	DFID technical and policy staff
IFPRI-coordinated 2020 Africa Conference, Uganda, June 2004	Adato, Meinzen-Dick, Haddad	African policymakers and technicians

After careful consideration, the Project Team proposes this strategy as opposed to a Project Conference. We anticipate reaching a wider audience (while still focusing on the CGIAR audience) and at a lower cost.

3.2 Materials containing the “messages”

We will produce the following materials for message dissemination:

- ◆ A collection of separate Briefs written in non-technical language. One for each case-study, one for each cross-cutting theme (e.g. methods, technology dissemination etc.), and a synthesis brief.
- ◆ A synthesis paper (see attached outline in Appendix 1).
- ◆ The individual Case-Study Reports (the 30-page short versions; we will encourage the individual CGIAR centers to submit the long versions to their respective Research Report series).
- ◆ A paper for the Chronic Poverty Centre at Manchester on the potential role of agriculture in reaching the poorest (Meinzen-Dick).
- ◆ A CD containing the short papers, briefs and the synthesis paper.

- ◆ An edited volume (see attached outline in Appendix 2), perhaps published by Intermediate Technology in conjunction with IFPRI.
- ◆ All materials on the IFPRI-SPIA web site (see <http://www.ifpri.org/themes/spia/spia.htm>) with links to other CGIAR centers.

4. Timeline

Month	Activity
April 6-7, 2003	Presentation at Manchester Chronic Poverty Conference
May 31, 2003	Receive revised and final case-studies
May 31, 2003	Complete Draft 1 of Synthesis report
June 2003	Begin producing Briefs
June 2003	Begin Editing Case-studies
June 2003	Begin
August 2003	Presentation at IAAE Meeting, Durban
September 2003	Presentation at IFAD, Rome
September 2003	Completion of some of the Briefs
October 2003	Presentation at AGM, Washington D.C.
November 2003	Presentation at USAID. World Bank
November 2003	IFPRI Policy Seminar
November 2003	Revised Synthesis Paper
December 2003	Complete Draft Edited Volume
January 2004	Presentation at DFID
February 2004	Completion of all Briefs
March 2004	Complete production of CD containing all materials, including Powerpoints
March 2004	Plan for IFPRI-coordinated 2020 Africa conference in Uganda

5. Budget

The attached budget reflects a pooling of the following anticipated resources:

Balance of current cost centre (DFID+others, 2648-000) as on March 31, 2003:	\$ 120,000
Balance of Bridging Period cost-centre (DFID, 2655-000) as on March 31, 2003:	\$ 33,000
Balance of Phase I cost-centre (DFID+others, 2614-000) as on March 31, 2003:	\$ 64,000
New Commitment from SPIA	\$ 80,000
Total	\$ 297,000

The budget reflects the above activities and reflects an end-date of March 31, 2004.

Specific items include:

- ◆ Time for Adato, Haddad, Meinzen-Dick, Fan, Rao and Hazell to complete technical and synthesis work.
- ◆ Time for Mignot and Arce to assist with administration of project.
- ◆ Time for an external editor to produce the briefs and to edit the case studies and book chapters.

- ◆ Time for IFPRI's Communications Division (Banda) to desk-top, format, produce, print and distribute the briefs and papers.
- ◆ Travel to the various conference for the IFPRI team and for the case-study leaders.
- ◆ IFPRI buy-back of 300 books from the publisher to be distributed by IFPRI to key developing country audiences.

TERMS OF REFERENCE FOR THE PANEL WHICH WILL CARRY OUT A EVALUATION AND IMPACT ASSESSMENT OF TRAINING ACTIVITIES IN THE CGIAR

These terms of reference relate to the Main Phase of this study. The First Phase involved a desk study and collection of background materials and data (see Annex I).

The Main Study will be carried out by a Panel of three experts, including the Chair. The Panel will be supported by a number of resource persons from the developing regions. The Science Council would like the Panel to use at least two complementary approaches in its data gathering and analysis (see Annex II). One approach would use NARS organizations as the unit of analysis and would rely on field surveys. The second would use specific training events across Centres as the unit of analysis and would be conducted virtually through trainee interviews.

The Panel will finalise, in close interaction with the interim Science Council and subsequently the Science Council (The Chairs of SCOER and SPIA and subsequently the Standing Panels on Impact Assessment and Monitoring and Evaluation), the interim study plan and methodologies to be used. The Panel will (a) carry out the Main Phase study; (b) interpret the results, using its own analysis and the Desk Study and its data and information as input and (c) report the evaluation findings. The Panel will be supported by a Panel secretary from the iSC/SC Secretariat and a member each from relevant Standing Panels of the SC.

Specifically, the Panel is expected to:

- a) Define and **develop the study methodology** on the basis of the proposed approach (Annex II). Specifically, the Panel will select the study samples, design data collection tools, including a harmonised approach to be used across the regions, and develop a data analysis plan. The Panel will draw from the data and information collected during the Desk Study. The Panel will work in close interaction with the Chairs of the relevant Standing Panels of the SC in deriving to the final design.
- b) Carry out and **manage, with support from the Secretariat, the evaluation and surveys, and data collection**. It will, in consultation with Science Council focal persons, decide on the engagement of the regional resource persons and brief them.
- c) Analyse the results of the survey covering areas specified below.
- d) Submit a report to the Science Council by July 2004.

The study report should provide information, analysis and recommendations at the System level, specifically covering four items listed below. For items 1 and 2 the Panel is expected to make full use of the Desk Study report and data collected. This information may also give indication of the plausibility of impacts. Likewise, NARS and trainee survey results will be important for validating conclusions about quality and relevance of training.

1. Assess the quality and relevance of the training activities within the CGIAR, specifically with respect to:
 - Processes used for assigning priorities to training activities and assuring quality and relevance;
 - Strategies to guide training as part of capacity strengthening;
 - Adoption of suitable new approaches to training.
2. Assess the comparative effectiveness and efficiency of CGIAR training activities, specifically with respect to:
 - Organisation of training;
 - Comparative advantage as compared with alternative suppliers;
 - Cooperation and coordination among Centres and other providers for effective supply;
 - Adopting new, promising approaches and modalities for training;
 - Achieving multiplier effects (leveraging CGIAR investments in training);
 - Responding to funding challenges; and
 - Allocating resources to training and within training vs. alternative activities.
3. Assess the intermediate outcomes and impacts of training, specifically with respect to:
 - The impact pathways planned and expected by Centres (see Annex III);
 - Sustainable increase in NARS effectiveness and efficiency in developing, generating, supporting and disseminating research results;
 - Enhancing the effectiveness of the Centres' research via e.g. closer partnerships;
 - Analysing constraints to achieving sustainable intermediate impacts and seeking ways to overcome these.
4. Assess to the extent possible the impacts of selected training activities on the ultimate goals of the CGIAR, giving particular consideration to the capacity-related constraints to achieving these goals.

Time frame

The Desk Study report is due in June 2003. It is a working document and information and data may be added to it for the benefit of the Main Phase.

The Panel is expected to work largely in virtual mode, but it is planned to hold an initial planning meeting in third quarter of 2003, and one towards the end of the study if necessary. As an output from the planning, the Panel should:

- review and complete the evaluation design;
- produce a vision of the final product;
- decide on the order of the different parts of the evaluation (sequential or concurrent);
- agree on sampling criteria and principle data collection methods;
- develop the data collection instruments and procedures;
- agree on the regional input from resource persons and design their TOR;
- select the regional resource persons (list to be provided by SC Secretariat).

The field surveys should be launched at the end of 2003 and completed in 2004. The Panel report should be submitted to SC In July 2004 and subsequently to the CGIAR Group at AGM'04.

ANNEX I

I. BACKGROUND AND RATIONALE

As a follow up to the third System Review, the interim Science Council (former Technical Advisory Committee) of the CGIAR is addressing the role of the CGIAR in NARS strengthening as one of the priority strategic issues. It is subsequently conducting a study on the training activities within the CGIAR as the first part of a broader assessment of Capacity Strengthening activities in the CGIAR. The Standing Panel on Impact Assessment (SPIA) and the Standing Committee on External Reviews (SCOER) of the iSC are jointly organising this study.

The CGIAR explicitly embraces the objective of contributing to the enhancement of the capacities of NARS in the developing countries. All CGIAR Centers participate actively in capacity strengthening, and training is a major capacity strengthening activity that nearly all Centres have been organising since their inception.

The evaluation and impact assessment must be related to the overall aims of the activities in question. Training and other capacity strengthening activities are often implicitly considered as having had even more far reaching positive impacts toward achieving the ultimate goals of the CGIAR, than the research results *per se*. However, the current context of alternative training providers, new modes of channelling capacity strengthening activities, and declining funding is forcing the CGIAR Centres to prioritise and redesign their capacity strengthening strategies. The training study is expected to provide information that will guide the CGIAR and the Centres in setting relative priorities regarding training focus, identifying effective strategies for CGIAR training activities at the System level, and enhancing coordination of training as part of other capacity strengthening activities.

II. ISSUES TO BE ADDRESSED BY THE STUDY

The overall purpose of this study is to assess the processes, outputs and impacts of CGIAR training activities for the NARS, and to make recommendations for improvement. The main objectives are to: (1) evaluate the quality and relevance of the training activities within the CGIAR, (2) evaluate the comparative effectiveness and efficiency of the training activities, (3) assess intermediate outcomes and impacts of training, and (4) assess to the extent possible the impacts of training on the ultimate goals of poverty reduction, food security and sustainable use of natural resources. The study has thus two interrelated dimensions: the stripe review part focusing primarily on the first two objectives and the impact assessment part, which addresses the latter two objectives.

The study aims to help: 1) the Centres improve the integration and effectiveness of their training activities; 2) the Donors develop justifications for support to the training programmes; 3) the NARS assume increasing responsibility in capacity strengthening and training appropriate for their own needs; and 4) the System, e.g., through the Science Council and other bodies, in monitoring and evaluation (self and external) of the training activities aimed at strengthening NARS capacities.

III. PROCESS

The initial planning of this study has benefited from broad consultations among CGIAR members, stakeholders and Centres for identifying important issues, which have been considered in designing the approach and study plan. The study includes a Desk Study and a Main Phase.

The desk study has been carried out at the iSC Secretariat in close collaboration with Centre focal persons, nominated by the DGs, who have provided information and data for the study. The Desk Study has four components: (1) Analysis of background information from external reviews and other documents for important issues related to training and capacity strengthening to inform the study planning; (2) Compilation of information and data on Centre training activities, covering the period 1990-2000 on all training activities (type, theme, length etc.) and on the participants of training events (country, sex, age, institution, status, etc.). The data have been analysed in order to establish trends in strategies, thematic and operational focus, funding and outputs, and for formulating hypotheses regarding alternative strategies and modalities. A System level analysis looks at overarching trends, themes, and issues; (3) Based on the first components, Dr. Leslie Cooksy, a consultant to the Desk Study, formulated a conceptual model or framework showing the anticipated links between training processes and training impacts (see Annex III); and (4) designed a preliminary methodology for the Main Study (see Annex II).

ANNEX II

MAIN STUDY DESIGN PROPOSAL

The Main Study will respond to the need for information about the impact of the training conducted by the CGIAR. Each year the CGIAR System supports a minimum of approximately 100 training activities and serves some 4,000 trainees at least.² Resource allocation to training was estimated at some 10% of total CGIAR investment in 2000. Given the scope of and investment in training across the CGIAR Centres, it is appropriate to evaluate the effectiveness of the training. The proposed study design aims at addressing that question. The specific questions of interest are:

- What are the effects of CGIAR training on trainees?
 - What effects (if any) has the training had on the specific tasks and responsibilities of the trainee?
 - What effects (if any) has the training had on the trainees' workplace?
 - What other effects (if any) do the trainees attribute to their participation in CCGIAR training?
- What are the effects of CGIAR training on National Agricultural Research Systems (NARS)?
 - In what ways (if any), has CGIAR training changed the quality of staff in the NARS?
 - In what ways (if any), has CGIAR training changed the policies and/or procedures of the NARS?
 - How do the effects of CGIAR training compare to that of other sources of training used by the NARS?

These questions are written at a general level and there are limitations to how much the study will be able to cover even at the CGIAR System level. There are too many training events in too many countries and regions for a single study to evaluate. Moreover, not every aspect of CGIAR training is of equal importance. Therefore in sampling, suitable criteria must be applied to assure the maximum utility and generalisability of the accumulated information. The selection of training events and NARS, as well as other evaluation design issues, are discussed in the next section.

Overview of the Evaluation Design

Effects of Specific Training Events

In this part of the evaluation, a set of training events³ will be selected and the training participants in each event will be surveyed using a combination of qualitative and quantitative methods. Possible criteria for the selection of the training events are presented in Table 1.

² Because we do not have data for all the Centres or all the years, these figures are probably a gross underestimate.

³ Training events are the specific implementation of training, including a specific time-period and set of participants. Training activities refer to types of training events, such as group or individual, short-term or long-term, in person or distance, training of trainers or traditional training of trainees, and other types.

Table 1 - Criteria for Selecting Training Events¹

Criterion	Assumptions and Considerations
Cost to the CGIAR	Cost is relevant to donors. Cost may indicate more important or more intense training events.
Intensity (such as length, trainer: trainee ratio, etc.)	More intense training has more easily observed effects. Intensity of training may also be a proxy measure of cost.
Region within which training was provided.	More regions mean greater relevance at CGIAR System level and to various CGIAR partners.
Types of training activities	A study that includes some of the more common types of training is likely to be of interest to many Centres. At the same time, a study that includes emerging types of training, such as distance learning, could be of greater use to the development of future training in the CGIAR.
Training themes or topics across Centres.	A focus on more common themes (e.g., crop improvement; natural resource management) will increase the relevance of the evaluation findings across Centres. But, the inclusion of emerging themes (such as geographical information systems or social science methods) may be more useful in assessing recent trends.
Length of time since the training activity occurred.	Training that has occurred more recently is likely to be fresher in the participants' minds. At the same time, more recent training may not have had time for the full set of effects (beyond the immediate outcomes for the participant) to develop.
Availability of recent evaluations of training activities.	To increase the utility of the information generated by the evaluation, training events that have recently had their impact evaluated probably should not be included.

¹ Not an exhaustive list

The study panel will be responsible for deciding which criteria are most important and then applying the criteria to the many training events in order to select a small set for inclusion in the evaluation.

Data collection and analysis

The trainees who participated in the training events selected by the panel will be the primary source of information for this part of the evaluation. Data on the trainees will be collected in at least two ways. First, any end-of-training satisfaction data may be obtained from the Centre that sponsored the training. Second, the trainees will be surveyed. These surveys may use questionnaire methods (mailed or emailed) or interview (telephone or in-person) approaches. The panel will weigh the trade-offs inherent in the possible approaches and determine the best approach based on the number and availability of the trainees and the resources available for data collection and analysis. Some respondents to the evaluation planning survey recommended the use of focus group interviews. If resources allow, the evaluation may supplement the trainee survey data with data from focus group interviews. However, because of concerns about the credibility of focus group data, especially for assessing effectiveness, focus groups should not be considered as a stand-alone data collection method.

The analysis will depend in part on the kind of data that are collected. At best, the analysis would yield two kinds of information. First, quantitative data would be analyzed using simple descriptive statistics, resulting in information on perceptions of overall effectiveness and of certain kinds of effects, as well as disaggregated data comparing perceived effects by different types of training activities, regions, and/or other variables of interest. In addition, qualitative information would be analyzed using a specific type of content analysis in order to identify themes and provide examples of effects, barriers to achieving effects, and other issues. In combination, these two kinds of information would provide a good sense of the trainees' perceptions of effectiveness of the selected training events. The analysis would not support statements about the overall effectiveness of CGIAR training, but would provide support for statements about the extent and nature of effects (perceived by the trainee) of a group of training events.

The major limitation of this part of the study is its focus on the individual trainee. While changes in the knowledge, skills, and behaviour of individual trainees are necessary to the overall success of CGIAR training, training is intended to have institutional effects as well (see Annex III). To address the institutional effects of CGIAR training in a way that goes beyond the role of the individual trainee, the second part of the evaluation focuses on the NARS institutions that are the primary mechanism through which the CGIAR expects to achieve its missions of reducing poverty and maintaining the world's natural resources.

Effects of CGIAR Training on NARS

This part of the evaluation examines the cumulative effects of CGIAR training on a set of institutions. First, a set of NARS institutions⁴ will be selected for inclusion in the study. Then, within each of the selected institutions, the NARS managers and researchers will be surveyed to learn about the cumulative effects of CGIAR training on the institution. In addition, NARS documents will be reviewed for additional information about CGIAR training effectiveness.

Selection of NARS

The study panel will be responsible for identifying criteria to use in selecting NARS. Possible criteria for choosing NARS could include regional coverage, type of institute, level of capacity of the institute, length and continuity of training relationship with the CGIAR; number of Centres involved in the training relationship, and other criteria.

The study panel will be responsible for deciding which criteria are most important and then applying the criteria to the list of NARS, provided by the iSC/SC Secretariat, in order to select a small set for inclusion in the evaluation.

Data collection and analysis

Surveys of the NARS administrators and researchers (and other non-researcher trainees, if appropriate) will be the primary data collection method for this part of the evaluation. These surveys may use questionnaire methods (mailed or emailed) or interview (telephone or in-person) approaches. The panel will be responsible for selecting the best combination of methods. For example, the panel could choose to conduct (1) in-depth, in-

⁴ NARS is here considered in a broad sense to include research institutions, NGOs, universities and the private sector

person interviews with senior administrators and unit managers to discover their perceptions of the role of CGIAR training in the development of their organization, and (2) focus group interviews with NARS researchers to learn what specific kinds of effects they have experienced themselves either by attending CGIAR training or by working with others who have participated in CGIAR training. Alternatively, questionnaires could be distributed to all the staff to learn about their perceptions of the utility and effectiveness of CGIAR training based on their own participation or the participation of their colleagues. The advantage of the focus group approach is that it is efficient in the cost and the richness of the data obtained (i.e., the full range of effects and related issues can be identified and discussed). The advantage of the questionnaire approach is that it can yield information about the extent to which certain kinds of effects occur. Of course, both approaches can collect information on perceived effectiveness only.

The panel will weigh the trade-offs inherent in all the possible approaches and determine the best approach based on the number of NARS selected, the kinds of information sought, and the resources available for data collection and analysis. No matter what survey method (or combination of methods) is used, related NARS documents (e.g., research proposals, strategic plans, scientific reports) will be identified and reviewed for other evidence of the presence or absence of CGIAR training effects.

Through a combination of quantitative and qualitative analysis, this part of the study will first produce case studies of the effects of CGIAR training in each of the NARS. Then, a cross-case comparative analysis will be conducted to look at lessons learned across the different NARS included in the evaluation. This analysis would enable the evaluation to discuss the effectiveness of CGIAR training at the institutional level, but the discussion would be limited to the NARS institutions included in the study. The information would not be generalizable (in the sense of statistically representative) to all NARS. However, the lessons learned about the kinds of effects, barriers to effects, and other institutional-level issues may be of value to NARS and CGIAR Centres not included in this part of the evaluation.

Strengths and Limitations of the Proposed Design

Strengths: Two units of analysis, training events/trainees and NARS, provides a more complete picture than either one alone. Ability to go beyond individual effects;
Use of panel for credibility, relevance, methodological quality;
Combination of qualitative and quantitative data.

Limitations: Generalizability = the training events and the NARS will not be representative of all training events or all NARS in the *statistical* sense. However, the selection of the events and NARS will be based on criteria that will ensure the most information-rich cases. In other words, while specific results will not be representative, information about the kinds of effects and challenges to achieving effects are likely to have some *logical* connection to other events and/or NARS. Of course, the number of NARS and the number of training events included in the study is of enormous importance to the overall study credibility;
Multinational/cross-cultural data collection;
Reliance, especially in the event module, on ability to find and obtain a response from former trainees. Low response rate could undermine the credibility of the study of training events to the point of making it a waste of time/money.

ANNEX III
GENERIC MODEL OF CGIAR TRAINING

Inputs	Activities	Outputs	Short-term outcomes	Intermediate outcomes	Long-term outcomes
<ul style="list-style-type: none"> ■ Results of training needs assessment ■ Skilled trainers ■ Funds 	Identify priority topics	List of training priorities	CGIAR training is relevant.		<ul style="list-style-type: none"> ■ Policy makers, managers and project leaders have a comprehensive vision of the role of science and technology in agricultural development ■ The sustainability of the development of the agricultural sector is increased. ■ A network of current and future partners throughout the developing world is established.
	Select appropriate training delivery tools and strategies for topic and audience (appropriate based on training needs, cost, integration of local knowledge, etc.)	Plans for addressing priority topics			
	Develop quality training materials	# and type of training materials developed	Well-designed training materials are available to CGIAR partners and clients.	NARS have an increased capacity to train their own staff.	
	Deliver training or support its delivery by another institution	<ul style="list-style-type: none"> ■ # of training events by type of event (group, individual, etc.) ■ # of participants/training event ■ # of men and # of women/training event ■ # of participants/nationality/training event 	<ul style="list-style-type: none"> ■ Trainees increase their knowledge and develop new skills. ■ The numbers of national scientists with postgraduate research qualifications are increased. ■ The numbers of specialists in the use of scientific methods and techniques are increased. 	<ul style="list-style-type: none"> ■ New knowledge and skills of trainees are transmitted to trainee colleagues and clients (multiplier effect). ■ NARS develop and implement relevant and up-to-date research programs. ■ NARS and other development partners increase their capacity to acquire, apply, access and further develop knowledge, skills, technologies and policies 	
	Participate in networks, consortia, and regional programmes (facilitates multiplier effect)	<ul style="list-style-type: none"> ■ # of networks, consortia, and regional programmes participated in by Centre staff ■ # of Centre staff participating in networks, consortia, and/or regional programmes 	<ul style="list-style-type: none"> ■ The exchange of information, experiences, and strategies among course participants, including course leaders (Centre staff), is increased. ■ Links between and among NARS scientists and Centre researchers are established. ■ Collaborative networks among countries – both formal and informal – are facilitated. ■ Research-extension-user linkages are developed or strengthened. 	<ul style="list-style-type: none"> ■ R&D partners have increased capacity for and interest in partnership. ■ R&D partnerships/collaborations increase. ■ R&D partnerships/collaborations produce improved technologies more quickly. ■ Interdisciplinary work among NARS researchers and between NARS researchers and their research partners increases. ■ Community-level adaptation of improved technologies increases. 	
	Support educational institutions, including primary and secondary schools, in incorporating relevant information in the curriculum	# and type of educational institutions supported	Educational institutions adopt changes in curriculum.	Educational policies support the incorporation of appropriate technologies and natural resource management in educational activities.	
	Support training courses organized by collaborating institutions	Amount and type of support to collaborating institutions	Network of training institutions to build synergistic linkages, increase awareness about the supply and demand for training, and share training and research materials	The effectiveness of training (as measured by the outcomes identified above) increases.	
	Evaluate the implementation and impact of training materials, event and/or strategy	Evaluation results	<ul style="list-style-type: none"> ■ Improved teaching skills among Centre trainers ■ Improved quality and relevance of training 		
Change training event or strategy based on evaluation information, if change is warranted	Documented change in training or overall training strategy				

¹ Prepared for Desk Study.

**EX POST IMPACT ASSESSMENT (epIA) OF NATURAL RESOURCES
MANAGEMENT (NRM) RESEARCH IN THE CGIAR**

SPIA/iSC WORK PLAN AND BUDGET

Overview

This workplan covers three main activities in an overall initiative to understand better the impacts of past investment in CGIAR research related to natural resources management (NRM). The three activities are:

4. Development of improved methods for assessing NRM impacts;
5. Empirical evidence of impacts from center activities;
6. Empirical evidence of impacts from Systemwide activities.

Ideally, activity 1 would be undertaken prior to the other two. However, due to the urgency of gaining a better perspective on the actual impacts of CGIAR activities in this area, it is proposed that the three activities be undertaken simultaneously.

SPIA/SC will act as the main implementing body for these activities, although center input will be key to the successful completion of the activities, and particularly activity 2, which will have center input in developing an operational plan of action.

It is stressed that this initiative is focused ex post impact assessment (henceforth referred to as “epIA” to distinguish it from all the other analytical exercises ongoing in the centers related to NRM and INRM. The resources provided to SPIA and the centers to undertake this initiative are a direct response to CGIAR investor interest in understanding better the impacts of their past investments in NRM research in the CGIAR.

ACTIVITY 1

DEVELOPMENT OF IMPROVED epIA METHODOLOGY

Overview

It is proposed that: (1) an expert in the area of NRM epIA be hired as a consultant to develop a basic background paper on state of the art in NRM epIA. At the same time, (2) the CDC Task Force on integrated NRM will be invited to prepare its collective thoughts on the subject and provide a review of the state of the art in the CGIAR System. (3) Both papers would be reviewed widely and would be the centerpieces of a SPIA/SC facilitated workshop to identify the elements needed in strategic, “best practice” guidelines (as distinct from a “how to” set of operational guidelines) for use in the CGIAR. (4) The consultant, working with SPIA and the CDC Task Force and center IA experts, would then develop the draft of such guidelines for review by the centers and eventual adoption and use within the System.

Background

NRM epIA has lagged behind assessment of the impacts of germplasm improvement and certain technology developments. The few that are available show on average lower returns than in the case of crop germplasm improvement research. Part of the problem with the apparent low returns to NRM research come from the fact that we have sometimes used methodologies that are poorly adapted to the subject and are too much a direct transpose of methodologies used for crop improvement research. Even for crop research focusing on sustainability, these methods are often inadequate: they tend to focus exclusively on what shifts either supply function as they are based on the calculus of economic surpluses in a partial equilibrium framework. This approach may therefore miss some of the important contributions made by research beyond the first phase of Green Revolution that was decidedly yield oriented, e.g., yield maintenance, risk reduction, quality improvement, reduction of negative environmental externalities, sustainability in gains, liquidity saving for cash constrained peasants (e.g, “savings on the stump” in the case of trees), compatibility with off-farm labor schedules, and so on.

When addressing NRM research impacts, a range of other issues needs to be considered. Markets are largely missing for the environmental services provided. Different valuation methods exist, all of which are highly imperfect and tricky to use, and hence need bracketing attributing prices from different angles. Externalities are spread over different scales and hence difficult to capture as each level needs to be done with different tools. The time dimension is crucial and hence the choice of discounting key. There are also important problems of resilience and irreversibilities that need to be taken into account in constructing counterfactual scenarios. For these reasons, designing control groups for NRM treatments is particularly difficult because of the spatial and temporal dimensions involved.

Yet we cannot ignore the fact that epIAs for NRM research are needed, since donors are interested in knowing the returns to their investments in this type of research. Thus, methods for appropriately measuring impacts need to be developed. SPIA will contribute to meeting this need by helping to bring together the best currently available methods for assessing returns from NRM research and acting as a catalyst in developing new approaches that consider the above factors.

Activities

1. Initiate a search for and then hire an appropriate expert to prepare a background paper on state of the art in the area of epIA for NRM activities.
2. Invite the CDC Task Force on INRM to prepare a paper describing (a) current state of the art in the CGIAR centers of epIA for NRM activities (including references to available epIA for NRM) and (b) its thoughts on where improvements are possible and what it would take to make such improvements.
3. Discuss the two papers in a workshop attended by centers, outside experts, SPIA and others from the SC and System Office. Main synthesis output would be a set of basic principles and strategic guidelines for doing NRM epIA in the CGIAR.
4. Prepare a final draft set of strategic guidelines for doing NRM epIA in the CGIAR.

Proposed Timeline

Activity	2003	2004
1a. Identify and hire expert in NRM IA	Start immediately	
1b. Preparation of background paper	Completed by Nov 30	
2. Preparation of paper by CDC Task Force on NRM	Completed by Nov 30	
3. Workshop on NRM IA sponsored by SPIA		Jan
4. Completion of final draft of strategic guidelines for IA of NRM research and related activities		March

Proposed Budget

Item	2003	2004	Total
Consultant/NRM expert (40 days @\$300 per day + travel)	\$ 14,000	\$ 4,000	\$ 18,000
Four virtual Panel members	\$ 6,000	\$ 3,000	\$ 9,000
Secretariat support	\$ 12,000	\$ 2,000	\$ 14,000
CDC Task Force on INRM	\$ 10,000		\$ 10,000
Workshop (to be proposed by consultant, SPIA and intercenter working group on INRM) ¹	\$ 40,000		\$ 40,000
Editing and publications		\$10,000	\$ 10,000
Total (current commitment)	\$ 82,000	\$19,000	\$101,000

1. This could end up being held in 2004, depending on progress.

ACTIVITY 2**EMPIRICAL ASSESSMENT OF THE IMPACTS OF CENTER LEVEL NRM ACTIVITIES****Overview**

This activity involves a set of case study assessments of the impacts of selected center NRM projects/activities. SPIA would provide resources and oversight for selected centers to undertake credible empirical assessments of the impacts of selected NRM activities/projects/programs in the context of the CGIAR mission and goals.

Background

While centers have undertaken a number of evaluations of NRM activities, not many have gone beyond a description of outputs and analysis of adoption in some cases. Much more evidence of impact from a wide variety of NRM research is needed. The lack of evidence from ex post impact assessments of NRM investments in the CGIAR was pointed out by the recent World Bank OED meta analysis of the CGIAR and it was recommended that more such work be urgently undertaken.

Activities

- 1a. Select centers for initial round of IAs. The selection process will involve direct input from the centers. In addition, it is intended that the ongoing iSC/centre initiative to produce a set of NRM/INRM case studies drawing on the best of the CGIAR experience will be helpful in selecting an initial set of 5 cases for the NRM epIA activity.
- 1b. Make appropriate arrangements with the chosen centers; provide them with grants to carry out the work; agree with centers on methodology to be used, outputs, timelines and appropriate peer review process through SPIA. Centers start cases.
2. Centers carry out cases; SPIA, through a hired consultant working with the centers, oversees the cases (much in the same way that SPIA, using Drs. Evenson and Gollin, carried out its oversight function of individual center crop studies in the case of the recently completed SPIA assessment of the impacts of CGIAR CGI research);
3. Workshop and production of final, peer reviewed publication(s) and synthesis assessment.

Proposed timeline

Activity	2003	2004
1a, b. Center selection and agreement with SPIA	Start Immediately (proposals due 01 June)	
2. Center case study assessments; SPIA oversight	Progress reports to be prepared by AGM03	First drafts due with SPIA February 15; final revised drafts due 01 May;
3. Workshop to discuss results and production of publications		Workshop in Sept., with documents (at least in draft form) available for AGM04

Proposed Budget

Item	2003	2004	Total
Center support ¹	5 centers@ \$30,000 ²		\$150,000
SPIA/iSC oversight	\$8,000	\$8,000	\$16,000
Workshop		\$20,000	\$20,000
Editing/Publications		\$8,000	\$8,000
Total	\$158,000	\$36,000	\$194,000

¹ Other centers can be added as experience with the first four is assessed.

² Grants made in 2003, although work would continue into 2004. In addition, there will be other center expenses/budgets. The 5 @\$30,000 is central funding of center input on case studies. Similar grants were made by SPIA in the case of the Evenson CGI epIAs recently completed.

ACTIVITY 3

SPIA epIA OF SYSTEMWIDE PROGRAMMES

Overview

This would be an assessment of the impacts associated with one or two of the longest running Systemwide programs that focus primarily on NRM activities (mainly through the ecoregional programs).

Background

The iSC has done a “mini” evaluation of the Systemwide programs with an ecoregional focus. However, the evaluation was preliminary and did not include assessment of the impacts of such programs. The present proposed activity would assess the impacts of one of the longest running systemwide programs, the Alternatives to Slash and Burn program. In addition, it would draw on the recently completed evaluation of CAPRI. In order to ensure effectiveness and efficiency in the use of CGIAR funds, the impact assessment would be carried out jointly with a more traditional iSC type of program evaluation. In fact, this assessment already is in the budget and work plans of the iSC/SPIA.

Activities

1. Organizing activities: Develop agreed upon process, timeline, functions, etc.; select of panels for each assessment, following normal iSC procedures, but including expertise in IA.
2. Undertake assessments.
3. Review of Panel outputs and follow up if necessary.
4. Prepare reports and present to members

Timeline (ASB Assessment)⁵

Activity	2003	2004
1. Organizing and background activities, Panel selection; etc.	3 months	
2. Undertaking assessment	Sept.– Dec.	Jan.-Feb.
3/4. Review and follow-up		March; rpt. in April

Budget

The iSC/SPIA has already been allocated \$50,000 for 2003 and \$10,000 for 2004 for the entire ASB evaluation and impact assessment. We assume that this is all that will be allocated. At the same time, it is our judgment that, given the extensive travel that will be required to do the job right (ASB is operating on three continents), the budget is will be very minimal in terms of doing both an adequate evaluation and a quality impact assessment.

⁵ Ideally, the ASB assessment can be completed in 2003, but that is assuming that everything falls into place and that it can be started immediately. Based on review experience, 2004 is a more realistic date.

NRM EX POST IMPACT ASSESSMENT (epIA) PROPOSAL GUIDELINES

I. CENTRE CASE STUDY PROPOSAL FORMAT (3-5 PP. MAX.)

The types of NRM research goals, activities and benefits that are of central concern in this first round of cases are indicated in attached Table 1. Each proposal should include at least the following:

1. **Research activity/project name**
2. **Background – reasons it was undertaken**
 - Statement of the problem and its global, regional or sub-regional significance in relation to CGIAR mission and goals; Justification for research.
 - Specific objectives of the research; Expected or intended impacts.
3. **“Impact Pathway(s)” defined (how do you see research going from results to impacts?)**
 - research activity → research outputs → technology development.
 - process of adaptation and adoption by users/clients.
 - adoption/utilization → impacts.
4. **Brief description of research, including:**
 - dates of initiation and completion of the research and total *costs*.
 - *linkages* to other research being undertaken by center and partners.
 - major milestones/key research *outputs*; and *new technology development*.
 - how adoption was measured and its magnitude and extent.
5. **Proposed impact assessment approach/method**
 - how impact will be assessed (please give specific indicators to be used, including for direct and indirect impacts considered).
 - include in this discussion consideration of (a) how the counterfactual will be estimated; (b) how attribution will be handled; and (c) how data reliability issues are handled.
 - will third party verification be possible (of data and analysis)?

II. PROPOSED CRITERIA FOR SELECTION OF CASES

The purpose of the cases is to provide, through *ex post* impact assessment, credible and transparent evidence (as distinct from “impressions”) of the impacts of CGIAR investments in NRM research in terms of the goals of the CGIAR related to sustainable poverty alleviation and environmental enhancement.

With that purpose in mind, the appropriateness of proposals will be based on consideration of the following:

- Did the research move to the extension/adoption stage at least 5 [for NRM focused centres] or 10 [for commodity/ecoregional centres] years ago; and are adoption figures available?
- Are impact indicators (intermediate and ultimate) clearly specified?
- Are there indications that the impacts are significant in magnitude (i.e., reach beyond isolated pilot schemes) and demonstrate the IPG-nature of the research?
- Have intermediate impacts already been estimated? Are there approximate cost and benefit estimates available?
- Does the approach/method of assessment proposed seem logical and feasible in the time frame available?
- Are relevant data available or easily accessible to allow successful application of the assessment approach proposed?
- Have counterfactual and attribution issues been addressed adequately?
- Are the data and analysis verifiable by third parties?

Table 1 – Relevant NRM Goals, and Examples of Beneficiaries, Activities, Outputs and Benefits

GOAL	EXAMPLES OF NRM ACTIVITY/OUTPUT	PRIMARY CLIENT OR BENEFICIARIES	EXAMPLES OF BENEFITS
Environmental protection	Watershed protection services; conservation of genetic resources	Society (downstream farmers, communities, global beneficiaries in some cases)	Opportunity access, e.g., in the case of future options for using saved genetic resources;
Input for sustainable agricultural productivity gains	On farm soil conservation; water harvesting; nitrogen fixation; shade provision;	Individual farmers and land users; consumers over time.	Increased incomes for farmers; reduced food prices for consumers;
Input for risk reduction	IPM; strategies/technologies to help adapt to climate change; droughts, etc.	Individual farmers and land users; groups in society in the case of positive externalities	More stability, greater resilience, losses avoided;
Joint product with yield and income effects in the form of positive externalities	Pesticide reductions; emissions and pollution reductions; carbon sequestration;	Individual farmers and land users and society in general in terms of the positive externalities	Reduced global warming damages; improved health; reduced costs for pollution control

STRATEGIC GUIDELINES FOR CONDUCTING EX-POST IA IN THE CGIAR

SPIA Draft Annotated Outline

I. INTRODUCTION

1.1 Justification

The need for establishing a set of strategic guidelines for ex-post impact assessment (IA) studies in the CGIAR is long overdue and has been re-enforced at the last two major CGIAR IA conferences⁶.

- Not a detailed step-wise 'how to' manual for carrying out ex-post IAs, but rather lays out the basic principles and strategic issues.
- Donors keenly supportive -- helpful in setting up internal guidelines for judging IAs and explaining them to funding and political bodies.
- A common framework would facilitate more effective system-level integration, synthesis, and comparison of centre-level assessments.

1.2 Challenge/Difficulty

Despite the multitude of IA studies done in the CGIAR to-date, documenting in a convincing way the effects of agricultural research is neither simple nor straightforward.

- Outcomes of interest, such as farm income, food and nutritional security, and environmental sustainability, are determined by many variables other than agricultural research and research related activities.
- Absence of high quality data from primary or secondary sources makes the task especially difficult.

1.3 Objective

Formulate a set of principles and strategic guidelines for ex-post IA in the CGIAR:

- addressing key issues such as defining user needs, plausibility criteria, attribution, development of counterfactuals, logframe and impact pathway analysis, credibility issues, transparency, and communication.
- define 'principles' of good practice under each when appropriate.
- highlight good (credible) studies as models to follow, working towards "best practices".

⁶ The SPIA-organized workshop on The Future of IA in the CGIAR: Needs, Constraints and Options, 3-5 May 2000, FAO, Rome; and The CIMMYT/SPIA int'l conference on the Impacts of Agricultural Research and Development, 4-7 February 2002, San Jose, Costa Rica.

II. USER NEEDS

Ex-post IA research has multiple uses including improving accountability, raising awareness, generating support, and improving research management. Given the diversity of uses among potential stakeholders, it is essential that IA be demand-driven and realistic objectives defined up front. This can only be achieved through dialogue between those requiring IAs and those carrying them out. Who are the former and what are their primary requirements?

2.1 Donors

- Primary: accountability and/or justification for future investments.
 - “we need all kinds of impact information in various forms” (Dana Dalrymple).
- Secondary: useful feedback.

2.2 Governments / policy makers

- Evidence of sound investment.
- Planning and resource allocation.

2.3. Research managers and scientists

- Re-assessing on-going programmes.
- Feeding it to ex-ante priority setting.

Decision makers typically require three types of impact information in order to make informed decisions. These relate to impact information for planning and priority setting (ex-ante IA), impact information from on-going activities (monitoring and evaluation) and impact information from past activities (ex-post IA). The focus here is on the latter.

III. WHAT IS IMPACT ASSESSMENT

3.1. Definition of terms

- ex-post vs. ex-ante IA.
- adoption studies (partial IA) vs. comprehensive IA.
- IA vs Evaluation.
 - Different types of assessment and evaluation have different functions and should be executed by different actors in the System. IA should not be confused with programme evaluation.
 - According to a well known textbook on evaluation (Rossi et al. 1999), "IA are undertaken to find out whether interventions actually produced the intended effects".
 - ex-ante IA (for programme planning) → done internally within projects.
 - ex-post IA (for accountability purposes) → done externally (independence essential).

3.2. Defining the principal agents, the intermediaries and the target beneficiaries, i.e., whose impact to be assessed

IV. DEFINING BASIC PRINCIPLES OF GOOD PRACTICE (OR, ENHANCING THE CREDIBILITY OF IA BY ESTABLISHING LINKAGES BETWEEN AG RESEARCH AND OBSERVED EFFECTS--THAT ARE IN TURN RELATED TO CGIAR GOALS)

Note: While following such practices may not guarantee the plausibility of one's claims, it provides the foundation for building a credible argument.

4.1 Programme Theory: Defining the Impact Pathway

4.1.1 Logical framework (theory of action) -- logical linkages between activities and outcomes (adapted from Figure 2.1 in Cooksey, 1997). Similar in concept to the "programme theory" (= sets of assumptions underlying policies and indicating why these policies are believed to have an impact)

- Step 1. Describing project activities [i.e., the source of impact].
- Step 2. Project outputs generated.
- Step 3. Project outputs utilized (e.g., new seeds, new technology, information).
 - uptake by institutional clients (NARS, etc.).
 - adoption by beneficiaries/target groups (farmers).
- Step 4. Direct and indirect outcomes from adoption (e.g., yields, better policies).
- Step 5. CGIAR-goal related outcomes / long-range benefits realised (e.g., increased incomes for poor households, improved nutrition, healthier environment).
- (also see p. 8, Krall et al., 2002).

These benefits, both direct/intermediate and ultimate must be related to the Mission and overall purpose of the Centre/CGIAR.

4.1.2 Impact criteria and indicators defined clearly

- Types of impact (positive AND unintended negative ones⁷).
 - Economic (food supply, economic returns).
 - Social (poverty, nutrition, education).
 - Environmental (resource base, water, air).
 - Institutional (NARS capacity, policies).
 - Integrated / Multi-disciplinary assessment.
- Indicators/proxies.
 - Economic (yield/production, producer/consumer surplus, RoR, B-C ratios)*.
 - Social (income, poverty #s, calorie consumption, literacy).
 - Environmental (soil status, water pollutants, etc.).
 - Institutional (trained staff, new policies, etc.).

⁷ This may include the usual negative environmental externalities, e.g., groundwater contamination, indirect negative effects on non-adopters (falling output prices) and losses due to inappropriate utilization of the technology in certain situations (the 'poison well' phenomenon).

- Unintended (biodiversity loss / groundwater contamination).

*Note, many of the cost – benefit or IRR studies have measured benefits in terms of overall estimated economic surplus. As most CGIAR centres' mission statements explicitly target alleviation of poverty and enhancing food security, B-C studies only indirectly address the impact indicator of interest. Logical frameworks can argue that reasonable linkages exist between these intermediate effects and the ultimate, higher level aggregate outcomes.

4.1.3 Distinguishing between the direct/intermediate vs. long-range outcomes/impacts, e.g., how far down the chain is the analysis going?

- Krall et al. (2002) believes the main attribution (cause-and-effect) gap is here, between intermediate impacts (increased yields) and higher level aggregate benefits (greater regional food security).
- This is supported by the study of Cooksey in 1997 who concluded that most CGIAR centres impact studies had no information and made no claims about long-range outcomes, such as the alleviation of poverty and conservation of the natural resource base. The few centres that did make statements about long-range outcomes had relatively weak data to support such claims. Only one impact study (from IPGRI) provided supporting evidence for making the claim about long-range outcomes.

4.2 Empirical measurement of changes in the impact indicator of interest (yield, income, food security, etc.)

4.2.1 Methods {specify by economic vs. social vs. institutional vs. environmental??}

- Quantitative.
 - Economic surplus.
 - Econometric analysis.
 - Survey.
 - Analysis of secondary data.
- Qualitative.
 - Case study.
 - Key informant/target group surveys.
 - Expert opinion.
 - Antecdotal.
- Mixed.
 - e.g., IFPRI poverty case studies.

4.2.2 Methodological rigour

- Appropriate tools used.
- Assumed values are adequately justified.

4.2.3 Discounting benefits and costs

- Defining and standardising opportunity costs for capital.

4.2.4 Sensitivity analysis to test critical assumptions

- Selecting inputs for analysis.
- Accounting for cumulative effects of covariance.

4.2.5 Limitations

4.3 Impact Monitoring

Relates to situations where impact of interest cannot be adequately measured or empirically related to the research outcome, but, where those research products are known to positively affect or contribute to it are measurable.

- Establishment of the logical framework linking expected outputs of the Centre to its overall mission and purpose is essential.
- Monitoring of intermediate products and outputs from research (e.g., publications) as indicators of steps made toward achieving the longer range outcomes of poverty alleviation and food security (the ultimate CGIAR goals).

4.4 Impact Pathway Analysis

4.4.1 The problem: The impacts/outcomes of interest, such as farm income, food security, etc., are determined by many variables other than the useful products of ag research. How to 'attribute' / measure ag research's role in the effect?

4.4.2 Impact pathway defined (logical framework, impact indicators) [see above]

4.4.3 Conceptual boundaries of analysis defined

4.4.4 Spatial and temporal dimensions of the IA analysis defined

- Time period depends on main objective of IA.
 - long term (15-20 years) for comprehensive aggregate level effects.
 - short term (5 years) for use by research managers in decision making.
- Spatial dimension.
 - geographical mandate/target of the research programme.
- Spillover effects.

4.4.5 Long-range/comprehensive or intermediate impact indicators measured or monitored

4.4.6 Develop/test plausible cause-and-effect relationships between linkages (as specified in the logical framework)

- Development of the counterfactual.
 - with and without (use of models).
 - before and after (baseline surveys).
- Multi-source verification and synthesis of evidence.
 - to limit bias from any single source or method.
 - assess: points of corroboration and points of inconsistency.

- Data gaps and cautious reporting of conclusions.
 - accuracy-related.
 - geographic coverage.

4.4.7 Stakeholder / Intended beneficiaries' perspectives

- Other informed opinion that support or contest the findings.
- Degree of consistency.

4.5 Scaling up

- Basis for extrapolation.
- Sampling issues.
- Cumulative and sequential impacts.

4.6 Measuring full programme costs

- Research and extension costs relevant to the development and dissemination of the technologies being assessed.
- IARC and NARS costs in the development and dissemination of the technologies.
- Indirect costs (administration, depreciation, complementary services).

4.7 Ensuring transparency

4.8 Dealing with attribution issues

4.8.1 When attribution is important and

- Relatively easy to do: When few actors involved and the research activity to research output to intended outcome/impact chain is reasonably straightforward and linear. When important but difficult to do.
- Relatively difficult to do: When many partners involved, many playing an important role in a complex process involving others outside agriculture.

4.8.2 When attribution is not so important

- Principle: The more effective a centre-NARS partnership is, the less desirable and feasible it is to attempt to attribute impacts separately to each partner. Indeed, in some cases, attempting attribution could be counterproductive and put at risk good working relationships.

4.8.3 Assessment of other mitigating factors (infrastructure, markets, policies, weather)

4.9 Cost effectiveness

- Quick and clean.
- Trade-offs.

4.10 Independence/Credibility

- Who conducts the ex-post IA?
 - IA for mainly accountability purposes requires external assessment, i.e. external to the programme being assessed.
 - by a unit outside the organization, to achieve maximum credibility
 - or from within the organization but outside the research programme; though the former is perceived to be more credible. (Consider third party audit).
 - important aspect is that it is perceived to be 'independent', without bias and credible.
- Role of NARS.
- Role of intended beneficiaries.

4.11 Drawing lessons

- Shortcomings/honest attribution.
- Elucidating key constraints and effects thereof.
- Lessons learnt.

4.12 Communication

- Clear strategy for communication linked to specific user needs (those requiring IA), and others.
 - for political decision makers, results of IA in short, transparent and readable form
 - effective dissemination of information / publicizing results.
- “We need all kinds of impact information in various forms. We need summary information for administrators and Congress, and we need more detailed information to use with colleagues and for ourselves in presenting the work of the IARCs and in making our own internal budget decisions” (Dana Dalrymple, USAID 2002).

V. MODELS TO FOLLOW

5.1 IFPRI policy impact studies

5.2 IITA Impact series

5.3 Others

VI. QUALIFIERS/LIMITATIONS

6.1 Data constraints

6.2 Hard-to-measure impacts

- Some impacts can't be measured cost effectively (doesn't mean impact isn't there).
- Valuation of non or partially priced goods and services.

6.3 Others

VII. FUTURE EMPHASES

7.1 Multidisciplinary Ias

7.2 Cost effectiveness (low cost, data collection)