

IMPACT ASSESSMENT
and
EVALUATION GROUP
of the CGIAR

Report to the CGIAR

ICW'99

Washington, D.C.

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IMPACT ASSESSMENT AND EVALUATION GROUP

Report to the CGIAR on Mandate and Activities

1. Composition and Organization

The Impact Assessment and Evaluation Group of the CGIAR (IAEG) is chaired by Prof. Hans Gregersen (USA). Drs. Cristina David (Philippines) and Frans Leeuw (Netherlands) serve as members. The position of the third member is vacant. The previous Chair (1995-1998) was Dr. Jim Peacock (Australia) and earlier members have been Eugenia Muchnik de Rubenstein (1995-97) and Eleanor Chelimsky (1995-1996). The IAEG is supported by a Secretariat that operates under the auspices of UNDP/UNOPS but is located at FAO, Rome. Dr. Guido Gryseels is the Executive Secretary of the IAEG. The IAEG Secretariat shares facilities and pools resources with the TAC Secretariat. Ms. Jane Garrioch provides logistical and secretarial support. Other professional inputs are provided by consultants. Dr. Roberto Lenton, Director, SEED, and Dr. Peter Matlon, Chief, Food Security and Agriculture Programme/SEED provide oversight on behalf of UNDP and the administrative support is provided by Cecile Collas of UNOPS. At FAO, the IAEG Secretariat is attached to the Sustainable Development Department headed by Mr. Henri Carsalade, Assistant Director-General.

2. Original and Evolving Mandate of the IAEG

The IAEG was established to:

- provide Members with timely, objective and credible information on the impacts of past CGIAR outputs in terms of the CGIAR goals;
- provide support to and complement the centres in their ex post impact assessment activities.

These functions are still as relevant as they were when the IAEG was established. However, it is becoming increasingly evident - as most recently emphasised by the System Review Report - that there is a third important function for ex post evaluation, namely, to provide feedback to priority setting, and create synergies by developing links to ex ante assessment and the overall planning and evaluation functions of TAC and the CGIAR Secretariat.

The need for objectivity, credibility, and transparency led to the original idea of assigning evaluation to a group of experts independent of the centres, the CGIAR Secretariat and TAC. The centres carry out the activities that result in impacts, the CGIAR Secretariat is directly involved in the allocation and management of resources of the System, and TAC is responsible for priority setting and overall resource

allocation, policy advice, centre programme reviews and recommendations, and other planning activities. The logical reasoning at the time of establishment was that the IAEG evaluate the impacts of the System's activities, should have an arm's length relationship with those entities that plan and manage the use of the System's resources.

The original concern for credibility through independence is still a strong consideration. However, since the IAEG was originally established, it has become evident that there is need for closer association between the different assessment and evaluation activities in the System. In particular, there is need for much closer linkages with TAC.

At the Mid-Term Meeting of the CGIAR in May 1999, the Group approved a proposal of the Cosponsors to replace the IAEG by an external standing panel on evaluation (ESPE) to work within TAC on impact assessment and evaluation. All System level external evaluations commissioned on behalf of the CGIAR would be organized through TAC, with this panel serving as the principal instrument of TAC. The current IAEG mandate would be transferred to TAC and all System level evaluation responsibilities would reside with TAC, with the IAEG ceasing to exist. There would be one secretariat with two wings, one supporting evaluation work of ESPE and the other supporting the rest of TAC activity. There would be one TAC budget, with a line item for impact assessment and evaluation. The operational consequences were to be worked out by the Cosponsors, in particular FAO and UNDP.

It is recognized that there are different stages of evaluation and assessment along a time continuum. Looking towards the past, we have **ex post evaluation of performance, achievements and impacts**. The resulting information is used in accounting for past use of resources and in planning the future. During the present stage along the continuum, there is **monitoring, evaluation and assessment** aimed at providing information to guide present activities and revision of ongoing plans. Looking towards the future, there is **ex ante assessment** of likely future environments and of expected impacts from research. The resulting information is used to help guide planning for future activity.

While we have a time continuum from past research outputs, through present research activities and on to expected future activities and output, the evaluation and assessment activities and their outputs fit into a broader dynamic evaluation cycle, in which the results of M&E continuously feed back into assessment and priority setting. Thus, all three points along the time continuum involve evaluation or assessment to provide information for *planning future priorities, strategies and activities*. Even in the case of ex post impact evaluations for accountability purposes, the resulting outputs mainly are used for future planning and resource allocation.

The question here is: where should ESPE and its activities fit within this overall evaluation and assessment cycle? What should be its structure and functions within the overall TAC framework, and where does it fit in relation to TAC's future looking activities?

The TAC Chair-designate has formulated a tentative proposal to integrate ESPE in the work of TAC's Standing Committee on Priorities and Strategies. Hence, the results obtained from ex post impact

assessment would feed directly into TAC's work on priority setting and strategic planning. The IAEG agrees with this approach. A concrete proposal will be presented at ICW'99

3. Activities

The IAEG has embarked on a number of complementary impact assessments related to the activities of the System in the context of its fundamental goals of poverty eradication, food security and environmental protection and enhancement. Substantial progress has been made in the studies addressing these contributions. The activities are introduced below; and summaries of progress and results to date for the major studies are presented in annexes to this report.

The results to date of the ongoing IAEG assessment activities document quantitatively what many familiar with the System and its work have suspected before:

- The System's crop germplasm improvement work has had and continues to have substantial impacts in terms of contributing to (a) crop production directly through IARC development of improved crop varieties, and (b) indirectly by providing genetic resources and associated testing, evaluation and training to NARS programmes. Evidence to date indicates that in the 1980s and 1990s the IARCs were producing proportions of total released varieties that were considerably above their scientist and investment proportions.
- The System's crop germplasm improvement and management research has led to (a) lower prices for consumers, which has benefited particularly the low income consumers, and (b) less land being cleared for crop production, avoiding the consequent loss of environmental values and deterioration of the landscape in which people live.
- The IPM work in the System has led the way in finding environmentally more benign ways of integrating pest management into agricultural development. The work provides a good overall return to the resources invested in the programme.

Below, the IAEG assessment studies leading to these conclusions are briefly introduced together with the whole range of on-going complementary IAEG activities. The details behind the general results and conclusions indicated above are provided in separate reports being presented at ICW'99.

The IAEG has seven ongoing activities that are scheduled for completion within the next two years (see figure 1).

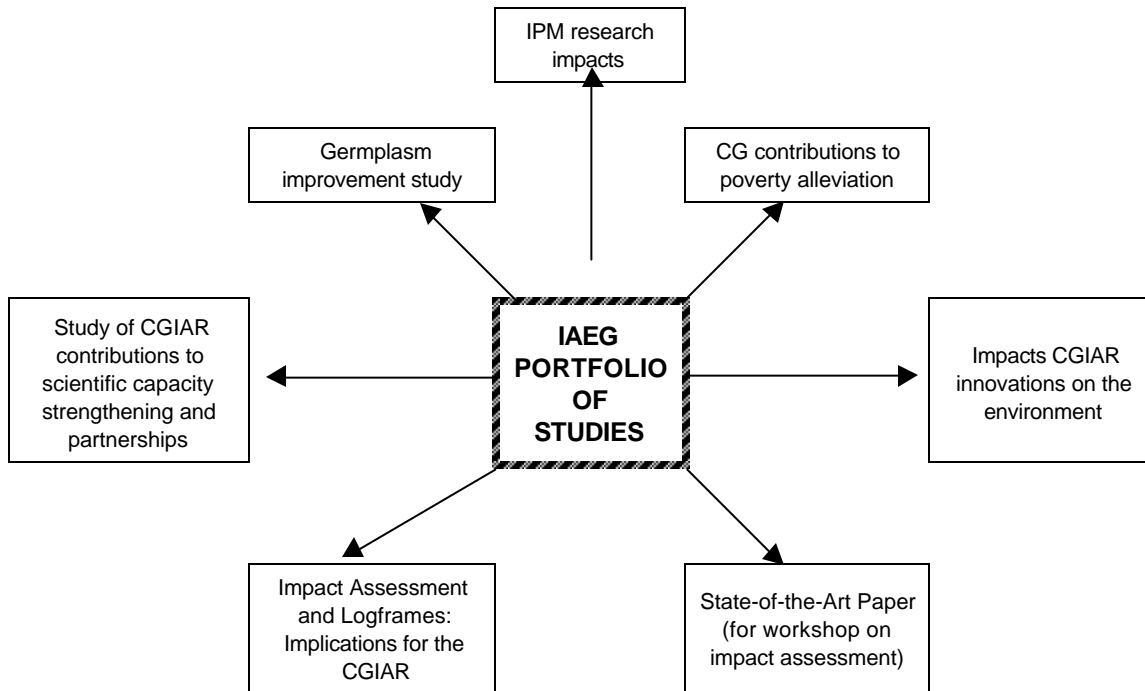


Fig. 1: IAEG Ongoing Assessments and Studies

3.1 Impact of CGIAR Germplasm Improvement on Food Production

Collaborative research to evaluate the aggregate productivity impact of CGIAR germplasm improvement programmes (GIP) is conducted under the leadership of Prof. Robert Evenson of Yale University. The study involves all the crop-related centres namely, IRRI, CIMMYT, CIAT, CIP, ICRISAT, WARDA, IITA, and ICARDA and covers all major CGIAR mandate crops, i.e., rice, wheat, maize, cassava, potato, beans, groundnut, sorghum, pearl millet, barley and lentil. The centre studies will cover countries constituting at least 80% of area planted of developing countries within their mandate geographic region. Special financial support was provided to each of the participating centres to assist in data collection and analysis. The study will identify all the new varieties released since the start of the centre work, their pedigrees; area planted and yield advantage. Together with the use of other economic data, the study will quantify the CGIAR's contributions to productivity growth directly through the release of cultivars developed at the centres and indirectly through the use of its own crosses and cultivars as parental lines, facilitating international exchange of germplasm materials, screening, and testing of advanced breeding materials, and contribution to capacity building in plant breeding. In addition to, and together with, national collaborators, this study will also measure the overall impact of the CGIAR's GIP on the agricultural productivity growth of the three largest developing countries - China, India, and Brazil. The study will be completed during early 2000 and the results will be presented at MTM 2000. In addition to the important results, the research associated with this study has also led to the development of new methodologies for the analysis of the impact of germplasm improvement-related activities.

The progress report (Document No. ICW/99/08/b) being presented at ICW'99 documents the following: measured IARC content in varieties by classifying the released varieties into different class groups depending on the origin of the cross and selection, and the pedigree of a variety; varietal diffusion patterns; estimates of varietal improvement/productivity relationships through centre studies and country-specific studies; and advanced economic and statistical analysis to examine the impact of improved varieties on productivity growth for major food crops.

The preliminary results of the centres' and country collaborators' studies were discussed at a workshop which took place on 7-8 August 1999 in Nashville, Tennessee. The workshop was held in association with the annual meetings of the American Agricultural Economics Association. Since a number of the centre studies started later and thus require more time to complete, only a preliminary integrative analysis is being presented at ICW'99. The final and complete report will be available by MTM 2000. For wider dissemination, arrangements have been made to present selected studies and the integrative analysis during the meetings of the American Association of Advanced Sciences in Washington, D.C. in February and the International Agricultural Economic Association in Berlin in August 2000. Financial support is being explored to present the findings at an international conference in which NARS, donors, and developing country policymakers would participate together with the centres involved and their collaborators.

3.2 Impact of Integrated Pest Management (IPM) Research

The IAEG commissioned a study on the impact of research on integrated pest management (IPM) conducted by the CGIAR. Prof. Hermann Waibel of Hannover University conducted the study. A draft of his report (Document No. ICW/99/08/c) is being presented at ICW'99. The report clearly shows that the CGIAR's investments have been profitable, and that even in the long term, the rate of return to investment in IPM research is in the magnitude of 15 to 40 percent. Prof. Waibel stresses the need to assess the impact of IPM in the broader context of the overall crop management system.

Prof. Waibel is a recognized international expert in the field of evaluation and impact assessment of IPM. The report is a draft that will be finalized following its discussion at IAEG 19 and ICW'99.

3.3 CGIAR Contributions to Poverty Alleviation

Following discussions at ICW98 between IAEG, Members of the CGIAR and IFPRI, and consultation with the participating centres, a revised proposal of the study on *The Impact of Agricultural Research on Poverty Reduction* was developed by IFPRI, which serves as convenor on behalf of IAEG. Drs. Peter Hazell and Lawrence Haddad of IFPRI manage this study. It involves eight CGIAR Centres and over 40 national partners. An Advisory Committee (Michael Lipton, Alain de Janvry, Jere Behrman and the Chair of IAEG) and a panel of external impact assessment evaluation experts assist in the research design and in providing a peer review process for the completed studies. The study will estimate the links between research productivity and poverty reduction and so doing will develop a set of impact assessment methodologies.

At present, the CGIAR System does impact assessments that are focused almost entirely on showing the extent of adoption of new technologies and their impacts on farm productivity. What is now needed is an in-house capacity within CGIAR Centres and NARS (trained staff, methods, cultural acceptance, etc.) to undertake the more difficult task of assessing poverty impacts on a continuing basis. These assessments must a) lead to better targeting of research priorities to the changing needs of the poor, and b) demonstrate poverty impact and hence the relevance of CGIAR investments.

The primary objective of this project is to initiate capacity for such poverty assessments. It is proposed as a first step in a continuing process of improvement and adaptation of poverty impact assessment and priority setting within the CGIAR System and its key NARS partners. The project will also provide assessment of some of the more recent post-green revolution work of the CGIAR Centres. The specific objectives of the project are:

1. To assess the impact on the poor of a representative set of recent and ongoing CGIAR research activities, including commodity improvement work, NRM, and policy research.
2. To identify and test best practice methods for quantitatively assessing the impact of CGIAR research on the poor.
3. To develop and test appropriate methods of social and institutional analysis to examine the context in which new technologies are released and adopted to better understand how agricultural research impacts on broader definitions of poverty and social outcomes (including empowerment, sustainable rural livelihoods, etc), and how research might be better targeted or integrated within the broader context of social development for sustainable rural livelihoods.
4. To strengthen the capacity of CGIAR Centres and NARS to undertake poverty impact assessments and to internalize poverty impact assessment culture for the future. Such capacity must be responsive to the changing needs of the poor over time.

The study is organized in two phases. Phase I of the project was undertaken between November 1998 and August 1999. A summary of achievements during Phase I follows herewith.

A review and synthesis of the literature on the links between agricultural research and poverty was undertaken by John Kerr and Shashi Kolavalli (consultants). It provides an update of the Lipton and Longhurst (1989) review undertaken for the 1985 CGIAR Impact study. The review by Kerr and Kolavalli will be published as an IFPRI/IAEG working paper in October 1999. The review confirms that agricultural research can have very favorable impacts on the poor, but that this is not an inevitable outcome and depends on the presence of sufficient enabling conditions. For green revolution type technologies, these conditions include an equitable distribution of land, secure ownership and tenancy rights, efficient input and output markets that serve all types of farmers, research and extension systems that are not biased towards large farms, and scale neutral technologies. The review also highlights the shortcomings of many past impact assessment studies, particularly their failure to establish adequate

counterfactual situations for comparative purposes, or to adequately control for many confounding factors that impacted on the outcomes.

Phase I also involved holding a design workshop that was held at IFPRI in Washington DC, May 1999. The workshop brought together the case study leaders from the various CGIAR Centres, together with the External Advisors and a number of donor representatives. The purposes of the workshop were: a) to review the key findings from the literature review study, b) to agree on the selection of a portfolio of case studies and c) to agree on the best practice methods that would be used to assess impact on the poor. In addition to agreeing on best practice methods for quantitative impact assessment, the workshop participants also agreed on the need for complementary institutional and social analysis of the context in which new technologies are released and adopted to better understand how agricultural research impacts on broader definitions of poverty and social outcomes (including empowerment, sustainable rural livelihoods, etc), and how research might be better targeted or integrated within the broader context of social development for sustainable rural livelihoods. After the workshop, the leaders of the chosen case studies were asked to revise their proposals to bring their methodologies into line. These were then reviewed again by the External Advisors, and a final round of revisions was made before they were included in a final revision of the proposal which was circulated early October 1999 to potential donors for support. To date, IFAD, the Netherlands, Denmark and Australia have provided funding, particularly for Phase I. The cost of Phase II of the project is approximately US\$ 600,000 during 2000, US\$ 840,000 during 2001 and US\$ 550,000 during 2002. Available funding still falls considerably short of the requirements for Phase II. Outputs from Phase II of the project will be available regularly as case studies are completed, starting early 2000.

At the request of IAEG, Dr. Liset van Dijk has prepared a concept note on *Empowerment in Agricultural Research*. This note clarifies the concept of empowerment and provides an input into the development of a methodology for measuring empowerment resulting from agricultural research.

This study is conducted in close consultation with the organizers of CIAT's international conference on the impact of agricultural research on poverty alleviation in September 1999. Representatives of the IAEG and of IFPRI were on the steering committee of CIAT's workshop and IFPRI produced a major paper resulting from Phase I of the IAEG study that was presented at the CIAT workshop.

3.4 Impacts of CGIAR Innovations on the Environment

The IAEG has initiated a study on the impact of the CGIAR on the environment, complementing its support to the workshop organized by ICRAF on *Assessing the Impact of Research in Natural Resources Management* in April 1998. The new activity will go beyond NRM research to look at the impacts of adoption of all types of CGIAR research on the environment. A concept note has been prepared and a state-of-the-art paper has been commissioned. A small panel consisting of Dr. Michael Nelson (New Zealand) and Dr. Mywish Maredia (India) is working on the activity at present; and a substantial progress report on Phase I of this assessment is being presented at ICW'99 (Document No. ICW/99/08/d).

The report is in four parts: (1) a conceptual background piece that lays out the nature of the concepts, issues and needs involved in assessing the impacts on the environment; (2) a survey of the literature, with a focus on studies that have evaluated the impacts of research on the environment; (3) a preliminary assessment of the implications of CGIAR germplasm improvement research in terms of use of land resources for different scenarios, and, in turn, what those different scenarios might have implied in terms of changes in soil erosion, biodiversity losses, carbon storage, and water use and quality; and (4) where the IAEG intends to go in the future. The aim is to solicit Group input and guidance in terms of developing the IAEG's future strategy for evaluation related to environmental impacts. With regard to Section 3 dealing with land use changes, it is stressed that this involves only scenario analyses at the present time. The data are not available at this stage to make a more definitive analysis of causal relationships.

It should also be noted that the current collaborative research on germplasm improvement, outlined in Section 3.1, will generate global information about the nature of pest resistance, cropping duration, and genetic diversity of modern crop varieties in developing countries worldwide, and their adoption rates. This will be invaluable in subsequent IAEG initiatives on evaluating the impact of the CGIAR's technologies and activities on water quality and human health, land degradation, and biodiversity. Similarly, the work on IPM (Section 3.2) will contribute knowledge and understanding related to environmental impacts. It is stressed that the IAEG envisions this whole area of environmental impact assessment to be a longer-term one that will require considerable effort into the future.

3.5 State of the Art Paper

The IAEG is helping to organise the ASARECA/ECART/CTA workshop on impact assessment of agricultural research in eastern and central Africa, to be held in Entebbe, Uganda, from 15-19 November 1999. The IAEG will give a keynote address and present a state of the art paper on impact assessment of agricultural research. The IAEG also provides support for the preparation of a paper that synthesises experiences with impact assessment in the eastern and central African region.

3.6 Workshop on Best Practices in Agricultural Impact Assessment

The IAEG has commissioned a lead paper to provide background for the organization of an IAEG workshop on best practices in impact assessment in agricultural research to be held on 3-4 May 2000 at FAO, Rome. Drs. Derek Byerlee, Jock Anderson and Mywish Maredia are currently preparing the background paper for this workshop on best practices in impact assessment. The workshop would be intended primarily for impact focal points at the centres and senior management (DDG level). Two people could, therefore, represent each centre. Other participants would be outside experts in the field of impact assessment, and representatives from IAEG, TAC, NARS, some major donors and the TAC/IAEG/CGIAR Secretariats. Overall, about 50 people are expected to attend. In addition to the lead paper, experiences gained at the centres, and IAEG's experiences with the Germplasm Improvement (Evenson), Environment (Nelson and Maredia) and IPM (Waibel) Impact Studies, as well as the Review of Impact Assessment Literature at CGIAR Centres by Cooksy on behalf of IAEG, would be drawn on.

3.7 Impact Assessment and Logframes: Implications for the CGIAR

The IAEG organized jointly with TAC and the CGIAR Secretariat a workshop on the implementation of the CGIAR logframe. It was held at FAO, Rome on 19-20 March 1999. The progress of four centres in implementing a logframe format for programme planning and in reviewing their experiences regarding the congruence with the CGIAR logframe was discussed. A report on this workshop is available at the IAEG and TAC Secretariats. As a follow up to this workshop, the IAEG is currently preparing a paper on using logframes for impact assessment and evaluation to be available in draft form by early 2000.

3.8 CGIAR Contributions to Strengthening Scientific Capacity and Partnerships

The IAEG is initiating a study on the CGIAR's impact on scientific capacity of NARS. This assessment will be conducted in close collaboration with the NARS Secretariat and ISNAR. As an initial step, the IAEG will develop and update data available on the accomplishments of the CGIAR in training activities since the 1984 TAC training study and subsequently attempt to measure the impact of those activities. The focus of the IAEG study would be on: (1) documenting and evaluating, to the extent possible, the quantitative and qualitative changes in institutional capacities, motivation and research environments (achievements) that can be associated with CGIAR training related activities; and then (2) assessing alternative scenarios of how those changes might be associated with impacts in terms of CGIAR goals.

The IAEG Secretariat has prepared a desk study that provides an overview of current centre activities in the area of training and human resource development. It has also collated and synthesised aggregate information on centre achievements with respect to number of trainees, type of courses, and so on. This desk study will be discussed at IAEG 19 on 23-24 October 1999. At that meeting the IAEG, in close collaboration with the NARS Secretariat, will then develop an analytical framework on how to proceed, as well as appoint a panel to help in the conduct of the study. The study will be conducted in close collaboration with the centres and the NARS Secretariat and should be completed in time for ICW 2000.

3.9 Report on Adoption of CGIAR Innovations and Other Completed Studies

The IAEG Study on factors affecting the adoption of CGIAR innovations, which was conducted in close collaboration with eight CGIAR Centres and their partners, with support from consultants from the University of Arizona, has been edited and printed following the discussions on the report at ICW98.

Other published studies of IAEG include: a critical review of documents reporting effects of international agricultural research centres (*Methodological Review and Synthesis of Existing Ex Post Impact Assessments* by Leslie J. Cooksy, Florida State University, on behalf of IAEG, October 1997), and the proceedings of an IAEG Workshop in April 1996 at ISNAR, The Hague, on Impact Assessment and Evaluation at CGIAR Centres. The IAEG has also published Annual CGIAR Impacts Reports that have been presented at ICW'97 and 98. Copies of publications are available at the IAEG Secretariat. IAEG's policy on data sharing and publications is attached at Annex 1.

4. Conclusions

This is the IAEG's final report to the Group. During the course of its existence (less than four years), a solid base for future impact assessment work in the System has been established. Needs and gaps have been identified; methods have been developed; and projects have been launched and are already producing valuable strategic insights. Centres have, at the same time, strengthened their capacities and commitment of resources to impact assessment. We believe that the IAEG has contributed significantly to this.

Good impact assessment takes time. Enormously challenging data, conceptual and analytical problems need to be identified and overcome in each study. IAEG has not taken the easy path of quick and dirty results to satisfy public relations objectives, but rather has insisted on a rigorous scientifically justifiable approach and a high level of quality assurance. We continue to believe that this has been the right approach.

The IAEG greatly appreciates the proposed integration of impact assessment and strategic planning activities within TAC. This will ensure that even greater benefit will be derived from Centre and System level investments in impact assessment in the future.

Last but not least, all IAEG activities have been conducted in close collaboration with the Centres. The IAEG wishes to express its sincere appreciation in particular to the "Centre Impact Focal Points" as well as to the Centre Directors General for their enormous contributions and commitment. The IAEG would also like to thank the Cosponsors, and the CGIAR and TAC Secretariats for their sustained strong support of IAEG's efforts.

IAEG Policy for Data Sharing and Publications

Data Sharing

1. All primary and secondary data collected through any project partially or fully funded by the IAEG shall remain the property of the Centres implementing the project. Access to those data, outside IAEG-related activities, will be determined by each Centre's respective data-sharing policy.
2. Such data shall be made available to the IAEG for inter-centre analysis or synthesis. Appropriate acknowledgement of Centre contributions will be made in all IAEG-related publications.
3. The IAEG will normally recruit a principal investigator (PI) to assist in the conduct of its studies. The IAEG and the PI are not allowed to furnish data provided by the Centres to any third party outside the terms agreed upon between the IAEG and the respective Centre(s) for work directly related to the IAEG project. Any additional or subsequent provision of data by the IAEG or the PI must have the prior and explicit approvals of both the source Centre and the IAEG. The PI must in all cases follow the individual Centre's guidelines on further use of that data beyond IAEG-coordinated projects.
4. The IAEG recognizes Centres' rights to have first priority in conducting centre-specific analyses on all primary and secondary data that they have collected in IAEG-supported work. The timing for provision of such data by Centres to the IAEG for timely analyses within the scope of IAEG-coordinated projects will be negotiated with Centres on a project-by-project basis. Moreover, after a reasonable period of time Centres are encouraged to promote the use of such publicly funded data for further analysis by NARS and other advanced institutions or professionals in the spirit of the IAEG's objective of strengthening impact analysis.

Publications

1. The IAEG encourages Centres to submit studies and papers resulting from IAEG-supported activities to refereed journals. This should form part of the external evaluation of the papers and dissemination process. The IAEG expects to be notified of acceptance by the journal and that acknowledgement of its support to be included in the paper.
2. To provide wider dissemination of research results to stakeholders, the IAEG may publish the collection of Centre-specific studies and synthesis papers in book or report form, and/or post these on its website (assuming permission from authors and copyright holders). This should not discourage efforts to publish at journal level since published journal articles may be reprinted with permission. The IAEG will also encourage reprinting of material that has been first published in an IAEG report.
3. The IAEG encourages efforts to publish or post on its website briefs of the different studies (including syntheses) in a variety of relevant newsletters, annual reports, magazines, etc., for wider dissemination especially among NARS and other stakeholders.