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MANUSCRIPT REPORT

External Funding of Development-Related Research: a Survey of Some Major Donors

John P. Lewis

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**EXTERNAL FUNDING OF DEVELOPMENT-RELATED RESEARCH:
A SURVEY OF SOME MAJOR DONORS**

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FOREWORD

Over the last several years, IDRC's Office of Planning and Evaluation (OPE) has undertaken to contribute to the Centre's knowledge of the environment in which it is working by documenting a number of major areas relating to research in developing countries. As an organization that has channelled most of its funds in support of developing country research to discrete, well-defined projects, it is important for IDRC to have an overview of the global context into which its support is provided and of the opportunities which exist for improving its effectiveness.

While the Centre has always carried out, through its program divisions, studies on issues relating to particular sectors, it has recently been focusing more attention on broader, multisectoral issues cutting across particular sectors. In this area, there is a marked shortage of reliable information. Even data on the broad pattern and evolution of research activity and its resources are hard to come by. In IDRC, OPE studies have already covered a survey of regional and international research centres based in the Third World and their role in strengthening developing country research. Others are under way on the resources available in developing countries for R&D activities and their present allocation, with special focus on the particular circumstances of the smaller countries. There have also been studies and workshops relating to resource allocation and evaluation for research from the point of view of research managers - initially in one sector, but with potential application to others.

Early in the process of identifying major issues, it became clear that a key element on which there was a dearth of reliable information was the overall support being provided to developing country research from external sources. Developing countries have been giving higher priority to enhancing their capacity for research and problem-solving. Support to development-related research, both for undertaking research and for building research capacity appears to have received higher priority and a commensurate increase in funding from donor agencies in recent years. However, the extent of external support and the areas in which it has been concentrated has not been well known. As a first step in collecting information, IDRC was fortunate in being able to interest Dr. John Lewis, Professor of Economic and International Affairs at Princeton University, in undertaking work in this area. As a distinguished former Chairman of the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) from 1979 to 1981, Dr. Lewis was eminently well qualified for this assignment.

While it was felt desirable to have a once-off overview of general funding patterns, an additional objective of Dr. Lewis' work was to lay the ground work for possible efforts to ensure the regular capture of information on donor flows to research, possibly using DAC procedures for data collection. Dr. Lewis' report, therefore, contains information on both these areas - an attempt to quantify the support to research by a number of major funding organizations and show the main sectoral allocations of this support; and observations and suggestions for arriving at standard treatment of this area to allow for comparable figures to be produced over time.

Dr. Lewis has benefitted from the cooperation of all the agencies that were contacted in the course of his survey. His report should provide an excellent basis for further discussion by funding agencies and developing countries of key issues in the global pattern of the flow of funds to development-related R&D. There are a range of questions which need to be addressed by developing countries and by those providing support to research, such as:

- Is the balance of support in aggregate to different sectors judged appropriate or are there major areas which are underfunded?
- Does external support take an adequately long-term view in seeking to build research capacity and avoid research "fads"?
- What mechanism can ensure that the funding of multilateral research institutions (international and regional centres) takes adequate account of the opportunity cost of such funding? (Over 200 such institutions exist and their total budget for research is in excess of US \$500 million. While the rate of creation of such institutions has slowed down since the 60s and 70s there are still subject areas that might warrant attention. Is adequate consideration being given to the areas of highest pay-off before the creation of such institutions?)
- What research resources can small countries effectively utilize?

IDRC hopes to contribute to future work and discussion of such questions.

I should like to take this opportunity to offer my sincere thanks to John Lewis for carrying out the study and to Tim Dottridge for providing the IDRC back-up and support.

W. Douglas Daniels
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Office of Planning and Evaluation

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All figures in the text and in tables are in US dollars

A C R O N Y M S

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
BOSTID	Board on Science and Technology for International Development
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Centre for Tropical Agriculture
CIDA	Canadian International Development Agency
CIMMYT	International Maize and Wheat Improvement Centre
CIP	International Potato Centre
DAC	Development Assistance Committee
DCD	OECD's Development Cooperation Directorate
FRG	Federal Republic of Germany
GATE	German Appropriate Technology Exchange
GTZ	German Agency for Technical Cooperation
IBPGR	International Board for Plant Genetic Resources
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDB	Inter-American Development Bank
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
IFS	International Foundation for Science
IITA	International Institute of Tropical Agriculture
ILCA	International Livestock Centre for Africa
ILRAD	International Laboratory for Research on Animal Diseases
IRRI	International Rice Research Institute
ISNAR	International Service for National Agricultural Research
MDB	Multilateral Development Bank
NUFFIC	Netherlands Universities Foundation for International Cooperation
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
R & D	Research & Development
S & T	Science & Technology
SAREC	Swedish Agency for Research Co-operation
UK/ODA	Britain's Overseas Development Administration
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WHO	World Health Organization

EXTERNAL-FUNDING OF DEVELOPMENT RELATED RESEARCH:

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I. INTRODUCTION

The salience of research

There is not an agency in the development promotion business today that doubts the importance of the contribution relevant research makes to the development process. It is true that in the field's early days, in the 1950s, the dominant theories of economic growth were so capital-centered that they seemed to slight the effects of everything else. But this itself was ironical: At that very time econometric studies of the sources of growth in the advanced economies, e.g., the United States, were finding that changes in the quantities of capital and labor explained only small fractions of the growth performance.¹ Most of the latter, instead, reflected increases in the productivity of these physical factors. In turn, many of the productivity advances plainly were due to the improving technology that was being generated by on-going fundamental and applied research.

This view of the salience of research quickly spread to the third world. In terms of sectors, it extended to the whole development-promotion spectrum. Agricultural progress was seen to hinge on the supplying of new technologies. The green revolution was

1 Abramovitz, M. 1956. "Resources and Output Trends in the United States Since 1970," American Economic Review 46 (May) pp. 5-23. Solow, R.M. 1957. "Technical Change and the Aggregate Production Function," Review of Economics and Statistics 39 (August) pp. 312-320. Denison, E. 1962. The Sources of Economic Growth in the United States. New York: Committee for Economic Development.

research-intensive. Industrial, energy, and transport advances reflected the abilities of applied research to adapt and/or innovate appropriate technology. Health and population programs were full of unanswered questions. Not only the shape and context of optimal education programs, but the very role of education in development demanded analysis. The third world was awash with needs for economic and other policy research. A number of aid donors devoted significant fractions of their technical assistance budgets, and some of their commodity accounts, to building host countries' research capacities. As the history of development assistance lengthened, donors had an additional incentive to invest in research: they became interested in evaluative research that would explore the effectiveness of past aid efforts.

Some aid agencies -- for example, Canada's International Development Research Centre, the sponsor of this study -- were created to do nothing but promote development-related research. IDRC has a set of other research-specializing bilateral agencies with which it interacts -- either ones with research-only portfolios like itself or ones that are the research wings of more diversified agencies.² But during the 60s and 70s many, indeed most, of the general-purpose bilateral aid agencies also got into research promotion. Several of the multilaterals did as well. The World Bank established a vice president and department of in-house research. Furthermore, the Bank took over the administration and chairing of the donor group that

2 Other members of the group include Sweden's SAREC, Germany's GATE, the Netherlands' (universities-related) NUFFIC, the United States' BOSTID (attached to the National Academy of Science but linked also to USAID), Australia's ACIAR and the International Foundation for Science (IFS).

provides continuing support for the array of international agricultural research institutes that started (at the initiative of the Rockefeller and Ford Foundations) with the establishment of the rice (IRRI) and wheat and maize (CYMMYT) institutes in the 60s. Further still -- and, as we shall see, of greater financial scale: the Bank began to build substantial research-funding components into its credits and loans. The regional development banks did some of the same, while UNDP and the UN specialized agencies concerned with development also engaged in research support.

There is little to suggest, moreover, that this build-up in development-research funding was cyclical. Much of what happens in the development-promotion field does indeed proceed in surges. But as far as one can tell, the development-research push has been a sustained one, and probably, despite the widely remarked constraints on official development assistance (ODA) at present, research funding has yet to peak.

But of this last, one simply can't be sure at present -- which brings us to the reason for this study.

Research support's statistical obscurity

Important as the subject is, there is no adequate tabulation of external donor aid to development related research -- little in the way of one-shot donor-by-donor aggregates, few breakdowns, whether by sectors or in terms of the various modalities by which research assistance is conveyed, and no continuing time series.

These are among the factors that have obstructed such data assembly and reporting: (1) Research is a cross-cutting category; without being clearly delineated, pieces of research funding get built

into other sectoral tabulations. (2) In some donor countries two different ministries or bureaucratic branches, one dealing with development cooperation, the other with science and technology, provide aid to research that bears on development, and the two are by no means always well articulated, among other things, for data gathering purposes. (3) The worst problem is one elaborated below: different donors have different definitions of "research." The differences arise in several dimensions. Donors never have agreed on a common conceptual architecture for aid-to-research reporting.

The development promotion community has not been indifferent to this informational gap. There have been valiant solo efforts to pull together such information as exists on development research funding -- for example, a 1981 article by Gorman that tries to gather data on support to research, in particular, social science research, for the period 1973-79.³ Moreover, the gap has been of continuing, at least recurring, institutional concern to both the development cooperation and the science and technology wings of OECD. The latter, in line with the Brooks report of 1971, long has been engaged in assembling an "inventory of activities of its member countries in S&T." As finally released for general distribution in 1985,⁴ this inventory provides a very useful compendium of the various organizational structures and units in OECD member governments that have to do with science and technology (not research only) in developing countries. It also contains a variety of tabulations, including expenditure tabulations,

3 Gorman, L. 1981. "The Funding of Development Research," World Development, 9:5, pp. 465-83.

4 OECD. 1985. Scientific and Technological Cooperation with Developing Countries. Paris, pp. 109.

country by country. But it attempts no compilation of assistance to development-related S&T or research across the set of OECD governments. As the report explains, this is because of the lack of comparability in the definitions and concepts members used and the measurements they reported. As a lone researcher, Gorman emphasizes the same lack of intercountry comparability in the published estimates collated in that writer's 1981 article.

The gap as to data on research funding is much less complete with regard to agricultural research than it is with respect to development-related research as a whole. Half a dozen years ago separate and important estimates of agricultural research funding were made by the International Food Policy Research Institute (IFPRI), the World Bank and FAO.⁵ We shall refer to some of these findings below, but in addition to their single-sector focus, all three studies were one-shot affairs.

The short of it is that the existing situation as to research funding is nicely illustrated in the very valuable quarter-century review of development cooperation into which the Chairman of the Development Assistance Committee cast his 1985 annual report on the occasion of DAC's twenty-fifth anniversary.⁶ DAC in the past, like its S&T counterpart in OECD, has been concerned to improve research-related reporting, and the 1985 report emphasizes at various points the contributions of, and further needs for, research. But the volume's

5 IFPRI, November 1980. Resource Allocations to National Agriculture Research, Washington. World Bank, June 1981. Agriculture Research Sector Policy Paper, Washington. FAO, September 1981. National Agricultural Research in Developing Countries, Rome.

6 OECD. 1985. Twenty-five Years of Development Cooperation: A Review. Paris.

sectoral chapter includes no section on research;⁷ and, although research is mentioned in some of the sectoral pieces that the chapter features, there are no estimates of outlays on research that can be aggregated across the sectors. The same is true of the large assortment of aid statistics that, as in other years, the statistical annex to the 1985 Chairman's report provides.

The research data situation is a difficult one, but it is not insurmountable, and it eminently is worth surmounting if current doctrine about research's pivotal role in development is right. Accordingly, the present study has two closely related objectives.

First, we seek, by means of some fresh data gathering, to get a rough and ready fix on what the current scale and composition of aid to development-related research in fact are. We are interested in how these current estimates compare with the recent past and with probabilities ahead. The product of such a one-shot estimating effort will be of interest to many in the aid arena, including recipient countries. It will be of particular concern to donor agencies trying to decide how much to invest in research, and in what ways and what sub-sectors. The results will have an italicized interest for agencies such as IDRC mandated to confine their programs to research support.

Second, we hope this exercise will encourage aid agencies and those who gather and collate aid data to sort out their definitional differences, establish an agreed conceptual frame for estimating research funding, encourage all or most aid donors to participate, and commence producing regular time series on the subject.

7 The sectoral matters singled out for emphasis are agriculture, irrigation, food aid, training and education, health and

Methodology

To get a rough sense of the recent and prospective levels of external research funding as well as to identify the main conceptual obstacles to routinized data gathering on the subject, it did not seem necessary to poll every aid donor. Instead it was decided to limit the present survey to official donors and, among these, to the larger ones and/or those which had displayed a particular interest in research funding. The governments or agencies from which responses were sought were the following

Bilateral donors or donor agencies

Members of the OECD Development Assistance Committee:

Canada

- Canadian International Development Agency (CIDA)
- International Development Research Centre (IDRC)

France [the Treasury speaking for all aid-related components of the French Government]

Federal Republic of Germany [the Ministry of Cooperation speaking also in behalf of the German Technical Cooperation Agency (GTZ) and all research-aid-related units of the FRG government]

Italy [the development cooperation wing of the Foreign Ministry]

Japan [The Bureau of Economic Cooperation of the Foreign Ministry speaking for all aid-related units of the Japanese government]

population, drinking water and sanitation, and fostering efficient (especially private) enterprises.

Netherlands [development cooperation wing of the Foreign Ministry
speaking for all relevant units of the Dutch Government]

Sweden [development cooperation wing of the Foreign Ministry
speaking also for the Swedish International Development
Agency (SIDA) and the Swedish Agency for Research Cooperation
with Developing Countries (SAREC)]

United Kingdom [(Overseas Development Administration (UK/ODA)
speaking for all relevant units of the British Government]

United States [Agency for International Development (USAID)
speaking for all relevant units of the U.S. Government]

Arab/OPEC aid agencies:

- Kuwait Arab Economic Development Fund
- Saudi Arabian Development Fund

Multilateral development agencies:

- Asian Development Bank (ADB)
- Inter-American Development Bank (IDB)
- United Nations Development Programme (UNDP)
- World Bank

These bilateral and multilateral donors have accounted for over four-fifths of global official development assistance (ODA) in recent years, and they include all or nearly all of those official donors which have projected a particular interest in research funding. Being limited to ODA, the survey does not extend to private assistance to development research, even though the latter has been considerable and in many cases pioneering.

A questionnaire (see Appendix A) was devised and in August 1984 circulated to the donors just listed. The nature as well as the content of the responses is detailed in the subsequent parts of this paper. In the second place, the principal investigator (and in some cases also others assisting him with the study) interviewed senior and other key personnel in most of the governments and agencies to which the questionnaire had been addressed. One or more interviews were held at their respective headquarters with CIDA and IDRC, the French, the Germans (both in Bonn and Frankfurt), the Italians, the Japanese, the Dutch, the Swedes, UK/ODA, USAID, ADB and the World Bank.

As the instructions accompanying the questionnaire made clear (Appendix A) the survey was mindful from the beginning of the particular lack of definitional clarity and agreement in the research area. Thus we asked respondents to complete two intersecting schedules, one that broke down the totals of research funding along procedural lines, involving different delivery mechanisms, the other along substantive or sectoral lines. The two schedules, if fully completed, generate a matrix. The breakdowns asked for in both dimensions (procedural and substantive) were fairly detailed. In the future a routinized, recurrent data-gathering exercise probably would wish to demand less detail. But for present purposes, although the questionnaire breaks its aggregates down into broad categories, the detail has the advantage of allowing users of the survey to vary the aggregates into which they gather the responses.

The division between development-cooperation and science-and-technology
branches

This point, mentioned already, does not require much elaboration. It is a fact that most OECD governments currently have a ministry or department of science and technology that is quite separate from the government's development cooperation organization. The former may be involved, along with its domestic and intra-OECD program, with extending certain kinds of assistance to the third world.

The potential for missed connections between the two branches was suggested by one of the author's experiences in the course of preparing the present study. In October 1984 at O.E.C.D. in Paris, members of the Development Cooperation Directorate told him about and gave him a copy of a preliminary version of what became the Science and Technology Directorate's 1985 paper on "Scientific and Technical Cooperation with Developing Countries" already discussed. By October 1984 this draft paper had been sent to the science and technology ministries or agencies of all O.E.C.D. member governments. Yet in subsequent visits to member capitals the author found no case where the official aid agency was aware of the paper.

The lesson is simply that -- along with finding a way to differentiate the "research" component from the larger category of science and technology (S&T) activities to which research belongs (an aspect of the definitional problems to which we turn next) -- data gatherers will need to keep asking whether they are encompassing all the assistance to development research being supplied by two-branch systems.

Insofar as such assistance is concessional, it should be included in tabulations of the government's ODA that typically are reported by the aid ministry or agency, and there is need only (as was done in the present survey) to remind the aid agencies to provide government-wide ODA numbers. The situation becomes less clear in the case of exchanges and other transactions between industrialized countries' and third world science and technology ministries that do not involve concessionality. These are not "aid," but some tabulations of OECD R&D flows to and from developing countries might wish to include them. They are not reflected in the present survey.

Defining "research" for development

The definitions that need to be reconciled if aid donors and recipients are to develop comparable estimates of the ODA that is being devoted to development-related research are blurred and conflicted at almost every turn. The present study has responded to the situation in two ways. First and primarily, it has adopted an inductive methodology: it has encouraged respondents to follow and make explicit their own definitions. Even at the cost of leaving some inconsistencies among components in the study's own aggregate estimates, it seems useful to establish, as it were, the range of conceptual practice among donors so that the latter can know how much reconciling they must do to achieve reasonable homogeneity as well as regularity in their statistical reporting.

But then, secondly, where inductive guidance has failed and this study has needed to make definitional choices of its own, its bent has been conservative. "Research," while ill-defined, is a prestigious label. There is some tendency to sweep a variety of activities under

its umbrella. The present inclination has been instead, when in doubt, to hew to a harder-core concept of research. As indicated, we have left these preferences mostly to respondents. But our own residual tilt probably has shaved our estimates somewhat.

The following are dimensions in which different donors' definitions of research can, and in many cases do, differ.

1. The subjects of development related research. As Part II of the paper explains, there are some reasons to second-guess some of the questionnaire's categorizing of detailed substantive and sectoral issues. But the responses to the questionnaire and our interchanges with the respondents have turned up few if any quarrels with the coverage of our topical list of research subjects. There have been no claims that items on the list do not belong or that it requires important amendments.

2. Problem solving versus capacity building. In what different donors to development-related research hold out as their guiding theories, there are sharp differences over the functions of research funding. One donor (the Netherlands is a clear case) will say the purpose is to find solutions to development problems -- as quickly and satisfactorily as possible, and who does the problem solving, and how, are secondary issues. Another donor (Sweden's SAREC is emphatic) insists its purpose is to build problem solving, i.e., research, capacity in the recipient country.⁸ A third (the Germans are a good

8 "A great deal of effort has been devoted by Third World countries to research and development, sometimes supported by donor organizations. These efforts, however, have not always been directed by explicit strategies for endogenous capacity building... SAREC has attempted to assist in building capacity in the more comprehensive approach." SAREC Annual Report 1983/84, pp. 7-8.

example) says capacity building is the real objective; but the best way to build capacity is to help the recipient learn by doing -- by engaging, with researchers supplied by the donor, in collaborative problem solving.

This is a matter, if and as donors undertake to reconcile their research funding concepts, that will deserve extensive discussion. Quite clearly there is a majority preference at present for the Swedish or German theory of the research-funding function. But care must be taken not to let the capacity-building theme open the door to all kinds of softer inclusions into the research category. If the latter is to reflect and gauge the strength of a driving engine of development, it is unhelpful to have serious research lost in a diluted solution of other things. This point applies to the next two definitional issues -- i.e., how much training does "research" (in a capacity-building sense) embrace, and where should one draw the line between research and non-research along the pure-to-applied spectrum?

3. Research and training. In capacity-building terms, some training is integral to research. Moreover, there are institutions where it is impossible to disentangle research and teaching/training budgets, and where it is better to credit the amalgam to the research category than to leave it out entirely. As the results in the balance of the paper indicate, several of our respondents count in the research tabulations all outlays connected with the establishment and/or operation of institutions of an explicitly research character. Further, most count as research support the funding of training of individuals at advanced, research-degree (Ph.D.) levels, whatever the de facto futures of such personnel. In the third place, in the case of mixed (research-cum-teaching) budgets that cannot be segregated, one

detects a predominant view, although this cannot be substantiated precisely, that support of institutions that are as research-oriented, for example, as the Indian Institutes of Technology or the (state) agricultural universities in that country deserves to be counted as aid to research. Plainly, all of these are matters that warrant clarification by the donor community.

4. The pure to applied spectrum. All aid budgets fund lots of "studies" -- feasibility studies, engineering appraisals, project evaluations, consultants' reports. These are done by much the same kinds of people with the same kinds of skills who do research. But in most vocabularies most of the studies are not research. Where does one draw the line?

The United States' National Science Foundation offers a broad definition of research, including its basic and applied components, that is followed by USAID:

Research is systematic study directed toward fuller scientific knowledge or understanding of the subject studied. Research is classified as either basic or applied according to the objectives of the sponsoring agency.

In basic research the objective of the sponsoring agency is to gain fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications toward processes or products in mind.

In applied research the objective of the sponsoring agency is to gain knowledge or understanding for determining the means by which a recognized and specific need may be met.

A not inconsistent but more operational approach to the span of the research spectrum was taken by Mr. J.A. Boer of the Dutch Department of Cooperation's Section for Research and Technology in a short August 1984 paper. Mr. Boer grades R&D efforts into five pure-to-applied levels. He is thinking in terms of wind energy studies but his methodology is broadly applicable. His levels are

- 1- R and D in laboratory conditions of a somewhat fundamental nature e.g., aerodynamic behavior in wind energy
- 2- Adaptive R and D of a systems approach geared towards the production of prototypes
- 3- Field-testing of complete prototypes, e.g., windmill, pump, storage
- 4- Pilot projects under real scale user conditions, e.g., 5-20 complete installations
- 5- Dissemination and mass deployment.

There was a sense among a number of the aid officials interviewed in the course of the present study that one might stretch one's definition of "research" as far down as number 4 on Mr. Boer's list. At any rate, if donors have such pure-to-applied graded information, they can specify their definitions in such terms.

In the present study, by all odds the most important case where this issue arises is that of the World Bank. It is possible for the Bank to develop, probably on a regional basis, very large aggregates for the "studies" being funded annually. As indicated in Part II, having been given access to the Bank's sectoral project data for two of its heavier areas of research funding, we here have tried to sift out the solid research components, implicitly using something like a "Boer" pure-to-applied gradient. But if we had not had access to that project detail, we would have been in the same position as those supplied only with "studies" aggregates, or with "science and technology" budgets within which an R&D subset is lurking but unspecified.

How to deal with such a predicament is another matter on which a cross-donor time series on research funding will need a rule of thumb. Quite clearly, both the assumptions that 100 percent and zero percent of S&T is R&D are unsatisfactory. The hunch that one-quarter to one-third of a "studies" or S&T budget could be counted as research may

be loosely supported by the "Frascati Manuel" cited by OECD's science and technology secretariat.⁹ The aid donor community should examine the degree to which its impressions on this score converge.

Time series; the dates of estimates

As an ad hoc exercise, one of the present study's worst disappointments was in the realm of periodicity. As the questionnaire indicates, we sought from our respondents discrete annual estimates for 1970, 1975, and 1980 and forward estimates (the questionnaire was sent, it will be remembered, in 1984) for 1985 and 1990.

Very few respondents were able to approximate this calendar. It is perhaps not surprising that, if estimates of research funding have been nearly lacking altogether, they are particularly difficult to reconstruct for earlier years. There are respondents whose research-support budgets have varied widely from year to year and whose spot estimates needed to be smoothed or shifted from one year to another in order not to be misleading. In spite of our various disclaimers, respondents as a group were very cautious if not altogether silent about their forward estimates.

The specifics of these dating problems are dealt with in Parts II and III. While they leave the survey less informative than we had hoped, they do not compromise its general thrust. As to the possible translation of the present ad hoc study into a continuing official exercise, the dating issues are not disquieting at all, of course,

9 O.E.C.D., 1981. The Measurement of Scientific and Technical Activities: Proposed Standard Practice for Survey of Research and Experimental Development. Paris.

since their solution would be inherent in the production of a regularly reported time series.

The participation of respondents

Nearly all the agencies to which we addressed our questionnaires responded in some measure. Seven -- the Asian Development Bank, IDB, UNDP, the Federal Republic of Germany, the Dutch, CIDA, and IDRC -- were able to adopt our questionnaire format, although in most cases not for all the years we requested. UK's ODA provided reports from which most of the information we sought could be drawn. The Japanese, French, and Swedish governments have supplied data for one of our benchmark years. An interview with Italian aid authorities in late 1984 indicated that research support had not yet entered prominently into their recently expanded program. The Kuwait Arab Development Fund provided information on specific activities.

Interestingly, the two agencies that account for the largest blocks of research funding, were, to begin with, among those whose data were harder to get at. These, both Washington-based, were USAID and the World Bank. We are particularly grateful to both of them for the way they contended, or helped us contend, with this predicament. The results are the largest pieces of new information the survey contains.

Research support has been high on USAID's program agenda for many years. Moreover, some data on centrally funded USAID research support were available in U.S. government publications. However, the agency was not able quickly to respond to our questionnaire because, being relatively decentralized (i.e., field-mission-centered) it lacked categorized reporting of mission-supported research funding. But

fortunately our request helped accelerate the implementation of an exploratory agency-wide canvass of research-related outlays.

The World Bank was and is a fascinating case. It surely has as much sophistication as any entity, world-wide, about the role of research in development, and it could provide precise data about its own in-house research budget (on the order of \$20 million annually) and about the Bank's contributions out of its own earnings to multilateral research networks, (some \$26 million a year).¹⁰ But there was no tabulation, and no simple way to assemble one out of ready-made Bank data, of the far greater amount the Bank contributes to external development-related research via its loans and credits. Fortunately the Bank gave us access to project data from which such estimates could be sifted in the case of two sectors -- agriculture and education -- in which, it appears, the institution's research support has been relatively high.

* * * * *

We turn now to the results of the survey, first, substantively, then, procedurally. Thereafter, harking back to matters that have been raised in this introduction, there will be a checklist of issues that those who would regularize the gathering of data on research funding will need to settle.

10 The chief such recipient is CGIAR, which the Bank chairs.

II. FINDINGS: ASSISTANCE TO RESEARCH BY SECTORS

In our questionnaire we asked for procedural detail, first, substantive detail, second. But the responses were fuller on the latter, and there may be greater interest in the substantive findings. We will start with them.

The aggregate picture

Table 1 assembles all of the survey's returns. Because of the ragged response by benchmark years -- six donors for 1970, seven for 1975, nine for 1980 and a dozen with estimates for or attributable to 1984 -- this table cannot confirm the upward trend in research funding surmised in the introduction. But in its 1984 total, where the one-shot returns for USAID and the partial data for the World Bank¹¹ are included, Table 1 does give us something approaching a fix on recent global aid to research, namely, a figure of \$1,050 million. When it is remembered that our respondents account for only about 80 percent of total ODA, and, further, that our World Bank figures are incomplete, the survey total appears to be consistent with an estimate for total 1984 aid funding of research in the range of \$1.3 - 1.4 billion.

Table 2 gathers the estimates of sectoral and total research support outlays by the six respondents that provided figures for all

11 In 1984 World Bank support for research in agriculture and rural development amounted to \$164 million. Its credits for research on education plus its contribution to the WHO-headed research program on tropical diseases totalled about \$5 million. USAID spent \$203 million in support of research on rural and area development and \$53 million on research on human resources development.

four of our benchmark years. As can be seen by comparing the 1984 total on this table with that on Table 1, these six represent a fairly small fraction of aggregate research aid flows. Nevertheless the trends indicated are interesting.

Table 1

Research Funding of Selected Donors¹ by Major Sectors
(values are in millions of current U.S. dollars)

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1984²</u>
Number of responding agencies	6 ³	7 ⁴	9 ⁵	12 ⁶
By sectors:				
Rural and area development(\$)	19.1	74.9	192.3	714
percent	36	49	46	68
Technology, science and national policy (\$)	11.2	27.5	121.3	149
percent	21	18	29	14
Human resources development(\$)	12.3	26.8	59.7	147
percent	24	18	14	14
Other (\$)	9.9	22.3	41.0	40
percent	19	15	10	4
Total	52.5	151.5	414.3	1050

¹ We treat the multilateral development banks among our respondents as "donors" because part of their transfers are concessional (although the funds come mainly from donor government contributions); and, even though they should not be included in ODA tabulations, we do include MDB nonconcessional loans for research because programmatically they are so akin to concessional research support.

² Totals reflect 1985 estimates for CIDA and UNDP and 1983 estimates for FRG and France.

³ IDRC, CIDA, FRG, ADB, IDB, UNDP.

⁴ IDRC, CIDA, FRG, ADB, IDB, UNDP, Netherlands

⁵ IDRC, CIDA, FRG, ADB, IDB, UNDP, Netherlands, Japan and UK

⁶ IDRC, CIDA, FRG, ADB, IDB, UNDP, Netherlands, UK, Sweden, France, USAID, World Bank

Table 2

Research Funding of Six Donors¹ by Sectors
(values in millions of U.S. dollars)

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1984²</u>
Research funding as a percent of total aid ³	4.1	4.1	4.5	4.7
By sectors:				
Rural and area development(\$)	19.1	51.2	68.2	134.7
percent	36	44	31	48
Technology, science and national policy (\$)	11.2	26.4	91.3	79.2
percent	21	23	42	28
Human resources develop- ment (\$)	12.3	17.7	27.8	34.0
percent	24	15.5	13	12
Other (\$)	9.9	20.1	30.6	33.6
percent	19	17.5	14	12
Total	52.5	115.4	217.9	281.5

¹ IDRC, CIDA, FRG, ADB, IDB, UNDP. See also Table 1, footnote 1.

² Totals reflect 1985 estimates for CIDA and UNDP, and 1983 estimates for FRG.

³ Aid here includes disbursements (1) of the three multilaterals -- ADB, IDB and UNDP, and (2) bilateral aid from Canada and West Germany. The latter two countries make grants to multilateral agencies but these have not been included since to do so would double-count Canadian and German contributions to IDB, ADB and UNDP.

There has been a strong growth in research funding on the part of these six. Even when the estimates are converted into constant U.S. dollars, the total roughly doubles during the table's 14 years, although the climb flattened in the 1980s.

As can be seen in the top line of the table, the share of their total aid that these donors have devoted to research support has been remarkably stable, remaining in the range of 4.1 to 4.7 percent in all four benchmark years. Indeed, when the same calculation is done for all 12 respondents reported for 1984 in Table 1, the research share of total aid still comes out 4.04 percent. While it is clear in other words that research support has been rising in real terms during the past decade and a half, the survey has not produced strong evidence that it has been rising relative to other aid uses.

Intersectoral allocations

Tables 1 and 2 both are broken down by the broad sectoral groupings adopted in the survey questionnaire. As noted earlier, detailed responses to the questionnaire can be grouped into different sectoral aggregates than those used by the questionnaire itself. However, the latter's sectoral groupings seem to have clashed little with the programmatic taxonomies of our respondents. Whether the groupings should be modified is another issue that donors collectively should ponder if and as they undertake serial data gathering on research funding. Meanwhile the present categories provide a useful breakdown of the broad areas into which donors have directed their research support. There are three of them and a residual:

1. Rural and area development, consisting of:
 - . agriculture and rural development
 - . environment, ecology
 - . natural resources -- including energy (this, as we shall be saying, perhaps should have been broken out as a separate category)
 - . transport and communications
 - . human settlements and area planning
2. Technology, science and national policy, consisting of:
 - . engineering and technology including adaptation and transfer
 - . natural sciences
 - . industrial development
 - . management, development planning, economic policy and applied social sciences
3. Human resources development including:
 - . research on education and training
 - . health and nutrition
 - . income distribution, poverty, employment
 - . population
4. Other development related subjects

Tables 1 and 2 tell similar stories about the allocation of research funds among the broad sectors. The six-donor group for which we have four observations has displayed a trend in favor of agricultural and other rural and area development research even though the allocation dipped (in relative terms) in 1980. For our respondents as a whole the shift toward rural subjects is more pronounced; with USAID and the World Bank's big agricultural research budgets added in, the 1984 figure rises to 68 percent of the research aid total. Between the six-donor group and the more comprehensive array in Table 1 there is some difference over the comparative performances of the human resources and the science, technology and national policy categories. The latter, in the six-donor case seems to have had an upward trend

that, with growing rural research spending, has squeezed human resources research downward. In the more comprehensive set of responses the two categories have roughly stood one another off, although here too there has been some relative attrition in human resources research. Table 1 makes it appear that research support aimed at other subjects than those embraced in our three main categories has been dwindling relatively.

Among the respondents to the survey there is no systematic difference between the ways that multilateral donors, on the one hand, and bilateral donors, on the other, have allocated their aid to research. Still, it is of some interest to separate out the former, as we have done in Table 3, which shows the allocations among broad sectors that the two regional-bank respondents, UNDP, and the World Bank made in 1984.¹² Their research spending on the rural sector was comparable to that of the bilaterals, but that on human resource development was even lighter than that of the other respondents.

Individual donors' sectoral preferences

Appendix B shows, donor by donor, allocations to the four broad substantive categories. While nearly all the donors have sustained a principal emphasis on rural and area development, most also have displayed the pattern just indicated: allocations to the technology and policy sector have been growing while the shares to human resource development have slipped. Japan and Sweden would be clear exceptions

12 Our data on the World Bank's allocations across research sectors are incomplete.

to this last if it were not that, with only single-year estimates for both of them, this survey cannot document trends for either.

The rising importance of technology/policy is notable in the case of UNDP, the Germans, and the Dutch. IDB, concentrating on technology

Table 3

Selected Multilateral Donors' Research Funding
for 1984 by Major Sectors
 (values in millions of current U.S. dollars)

	<u>Asian Development Bank</u>	<u>Inter-American Development Bank</u>	<u>UNDP</u>	<u>World¹ Bank</u>	<u>TOTAL</u>
Rural Area Development (\$)	5.37	47.00	0.26	164.00	216.63
Percent %	73	64	52		86
Technology, science & national policy (\$)	0.69	26.00	0.16	--	26.85
Percent %	9	35	32	--	11
Human Resources Development (\$)	0.35	1.00	0.05	5.00	6.40
Percent %	5	1	10	--	3
Other (\$)	0.99	--	0.03	--	1.02
Percent %	13	--	6	--	--
Total	7.40	74.00	0.50	169.00	250.90

¹
 World Bank figures are incomplete for Technology, Science and Human Resources Development.

and policy, spends little on human resource development. The Germans and Dutch do spend on the latter, but at a reduced relative level. ADB and CIDA have been overwhelmingly committed to rural and area development. France, while allocating slightly less than two-thirds to rural and area development, gives substantial assistance to both technology/policy and human resources. IDRC and, to the lesser extent, UK/ODA have sustained fairly steady allocative patterns among our four broad sectors. The sectoral orientations of USAID and the World Bank already have been noted.

Rural and area development

Table 4 shows the breakdown of the rural and area development category of research funding for the respondents represented in Table 1. The first of the five subsectors, "agriculture and rural development," plainly is the dominant recipient. Interestingly, when the big numbers of USAID and the World Bank are added into the 1984 totals, the share of the first subsector does not change notably. Thus, compared to other aid agencies, the two largest donors are heavy on rural and area development in the aggregate, but within the broad sector they tend to divide their money like other agencies.

The big jump that Table 4 shows for environment-related research in 1984 reflects a large French expenditure in that year. The human settlements line exhibits a more moderate but still significant rise -- despite the fact that, because of the incompleteness of our data from the World Bank, our estimate slights that institution's significant investments in urban research.

The second largest subsectoral allocation in Table 4 is to research on natural resources including energy. This has shown strong

Table 4

Selected Donors' Funding of Research on Rural andArea Development by Subsectors
(Values in millions of U.S. Dollars)

		<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1984</u>
No. of responding agencies ¹		6	7	9	12
Subsectors					
Agriculture and rural development	(\$)	13.07	62.59	159.70	590.73
percent	%	69	84	83	83
Environment and ecology	(\$)	0.19	0.3	1.06	45.58
percent	%	1	-	1	6
Natural resources,	(\$)	2.65	10.35	25.41	64.26
(of which energy)	(\$)	(.01)	(.37)	(1.13)	(22.03)
percent	%	14	14	13	9
Transportation	(\$)	3.10	0.34	2.87	3.57
percent	%	16	-	2	1
Human settlements	(\$)	0.09	1.29	3.21	9.80
percent	%	-	2	2	1
Total (\$)		19.10	74.87	192.25	713.94

¹ Same as Table 1.

absolute growth and perhaps some bulge after the second, although not after the first, oil shock. But its relative decline in the latest reported year is not easily explained. Perhaps one sees some subsidence in energy concerns as well as the reflection of our failure to obtain data on the World Bank's energy-related research at the same time we were getting its numbers on agricultural research.

Agriculture more particularly

So much development-related research is in fact agricultural-development-related research that one wants to provide more detail in this sub-sub-sector -- and also to compare our respondents' returns with some of the other recent global estimates of agricultural research funding mentioned earlier.

Table 5 reflects an effort (involving some interpolations of respondents' replies) to provide more detail on the agriculture-rural category. It shows a four-way breakdown for the four benchmark years. Although, of course, the later years represent more donors, the appearance of accelerating commitments to research in both the agricultural sciences and to social sciences bearing on rural development is quite striking.

On the second point, some of the estimates of agricultural research funding made near the turn of this decade were indeed global. In an International Agricultural Development Service (IADS) occasional paper in 1979, Professor T.W. Schultz posited a figure of \$1,050 million for agricultural research spending in developing countries. This was 15 percent of the \$7 billion Schultz attributed to the activity worldwide. A couple of years later the World Bank and FAO came out separately with estimates of 25 percent of a worldwide total

of \$5 billion -- hence \$1,250 million annually. To be compared with the present survey's figure for 1984, these estimates would need to be inflated to reflect price changes between the year in question and 1984. But then, because the estimates just mentioned were seeking to encompass total expenditures on agricultural research, including those being made by developing countries out of their own resources, these estimates, for purposes of comparison with our figure for donors' inputs in 1984 (namely, about \$600 million) would need to be scaled down by the amount of aid recipients' own outlays. There appears to be no available source for the last.

However, there is one estimate of the value of external resources contributed to agricultural research in developing countries that more or less goes head-to-head with ours. This is the one made under the leadership of Peter Oram for the International Food Policy Research Institute in 1982. Oram estimated that the average value of that flow for the period 1976-80 was about \$400 million per year in 1975 prices. Adjusted for the decline in the value of the dollar between 1975 and 1984, that would make for an annual estimate of, perhaps, \$700 million. If there had been no real growth in the flow between the 1976-80 average and 1984, and if our respondents account for about four-fifths of the total flow, then the Oram figure corresponding to our \$600 million estimate for 1984 would be on the order of \$560 million. Even with some allowance for real growth, the two estimates converge reasonably well.

Table 5

Selected Donors'¹ Funding of Research on Agriculture and RuralDevelopment by Subsectors
(values in millions of U.S. dollars)

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1984</u>
Total rural and area development	19.10	74.87	192.25	713.94
of which: agriculture and rural development	13.07	62.59	159.70	590.73
Subsectors				
.Agricultural science	11.79	54.07	101.03	479.58
.Rural development/social sciences	.64	6.01	20.81	75.47
.Fisheries	0.62	1.71	27.06	25.75
.Forestry	0.02	0.80	10.80	9.93

¹ Same as in Table 1

Table 6

Selected Donors' Funding of Research on Technology, Science

and National Policy, by Sub-Sector
(values in millions of U.S. dollars)

		<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1984</u>
Number of responding agencies ¹		6	7	9	11
Subsectors					
Engineering and technology	(\$)	2.26	12.05	43.46	61.05
percent	%	18	44	36	41
Natural sciences	(\$)	1.09	1.26	11.00	7.18
percent		10	5	9	5
Industrial development	(\$)	6.93	11.30	53.31	52.51
percent	%	65	41	44	35
Management, planning, economic policy, applied social sciences	(\$)	0.92	2.90	13.54	28.43
percent	%	7	10	11	19
Total		11.20	27.51	121.31	149.20

¹ Same as Table 1 except that 1984 World Bank data have not been obtained for this sector.

Science, technology and national policy

In the broad sector of science, technology, and national policy research, the respondents represented in Table 6 have invested most heavily in the subcategories of engineering and technology, and of research on industrial development. The former appears to have been on a rising trend, the latter on a declining one since 1975. But together they have claimed at least three quarters of the sector's research aid in each of the last three benchmark years.

In the remainder of the sector, the last subcategory has outpointed support of work in the natural sciences. But both received significant assistance, and, obviously, some science-related research already has been covered in the "technology" category just above. One senses that latterly donors have been providing fewer economic and other policy advisers to aided governments than were common twenty years ago; and they may also be doing less institution building in such areas as management training. Thus the pace at which spending on research in these fields has been picking up may reflect efforts to develop indigenous analytical and problem-solving capabilities.

Among the donors, the Dutch, the British, IDRC, and IDB have stressed the engineering and technology subsector. The Germans and UNDP have particularly emphasized industrial development. The British as well as CIDA and SAREC have evinced interest in the natural sciences, whereas the Dutch, IDRC, UNDP, France and (again) the British have supported management, planning, and policy research.

Human resources development

Of the four subcategories into which the questionnaire divided funding of research on human resources development (see Table 7),

education and training together with health and nutrition claimed at least 80 percent of respondents' support in the last three benchmark years. The health and nutrition share of their combined total has been on the rise.

The funding of research into the subjects of income distribution, poverty; and employment looks conspicuously low in Table 7, particularly during the 1970s when donors' antipoverty and basic-needs efforts were in full stride. Partly this is misleading: the two largest research funders, USAID and the World Bank, gave support to such work in the 1970s that is not reflected in our tabulations because of the 1984-only nature of our information about both agencies. Moreover, support of some activity that might be included under the poverty and employment rubric no doubt has been counted under rural development. Nevertheless the recent investment in poverty and employment research looks rather sparse.

There has been considerably greater investment in population-related research. But the table, at least, suggests that the level of support has been erratic.

With regard to particular donor inclinations in the area of human-resources research, the Germans have emphasized education with some attention to health and nutrition. The same was true of the Dutch in the 70s; more recently they have been increasing their contributions to health and nutrition research and giving some attention to the poverty-employment complex. France also has focused on education and health but with the heavier emphasis on the latter. UNDP has leaned toward education and the poverty-employment area. The Swedes emphasize health/nutrition and, to a lesser extent, population and poverty/employment. Neither IDB nor ADB has done much in this

category. As for the Canadian agencies, CIDA has concentrated on education whereas IDRC, while spreading its contributions across the sector, has shifted its focus from population in the 1970s to education and health/nutrition in the 80s.

Fifty-three million dollars of USAID's 1984 research funds were allocated to research on human resources development. Of this amount, 43 percent went to health/nutrition research, 33 percent to research on education, and 24 percent to population research. Except for the World Bank's contribution to WHO-led tropical-diseases research we have not gotten at the Bank's funding of other human-resources-related research than that on education. In that case, however, a review of the Bank's project files on education indicates that it disbursed some \$32 million on research components of education projects in the 1970s and some \$28 million for the same purpose during the first half of the 1980s.

Table 7

Selected Donors' Funding of Research on Human Resources
Development, by Sub-Sector
 (values in millions of U.S. dollars)

	1970	1975	1980	1984
Number of responding agencies ¹	6	7	9	12 ²
By sub-sector				
Education and training (\$)	10.44	17.67	20.84	53.53
percent %	85	66	35	37
Health and nutrition (\$)	0.87	3.72	31.85	65.30
percent %	7	14	53	45
Income distribution, poverty, employment (\$)	0.03	0.04	5.22	8.22
percent %	--	--	9	6
Population (\$)	0.96	5.05	1.75	19.58
percent %	7	19	3	13
Total	12.30	26.84	59.66	146.62

¹ Same as Table 1.

² World Bank figures in the Human Resources field for 1984 cover research on education and tropical diseases only.

III. FINDINGS: THE PROCEDURAL PATTERNS OF AID TO DEVELOPMENT RELATED RESEARCH

The survey has been less successful in eliciting comprehensive information about the means and channels by which assistance to development related research is provided. We asked for such information in considerable detail. In the first instance the questionnaire broke down transfers in behalf of research relating to development into four broad procedural categories:

1. Transfers to individual developing countries -- to either individuals or organizations. We expected this to be the dominant category, and such turned out, overwhelmingly, to be the case.

2. Contributions to international research institutions and/or networks. Here the most prominent example is the cluster of international agricultural research institutes looked after by the (World-Bank-chaired) Consultative Group on International Agricultural Research (CGIAR). But there are others, such as the research network on tropical diseases chaired by WHO. We were interested in finding out how many similar institutions or networks were being used by our respondents as channels for their assistance.

3. Grants or payments to individuals and organizations in developed countries. Coming, as the writer does, from an industrialized country university background, not only was he aware of many instances in which development-related research in OECD universities and other organizations has been funded by bilateral and multilateral aid agencies; he is confident such financing is an

appropriate and often productive use of small amounts of ODA. But some aid agencies have been increasingly diffident about appearing to feather home-country institutional nests with scarce concessional resources. Moreover, our questionnaire did not deal clearly with an ambiguous set of cases, namely, where the donor uses a developed country institution (e.g., a university) as a channel for transferring research grants to developing country institutions and personnel. Should this be recorded as a Type 1 or Type 3 transaction in the present list? Our respondents tended to answer, "Type 1." For this reason and the general diffidence just noted, the survey's reporting of the funding of research being done in and/or by developed country institutions appears to be understated.

4. Transfers for development research activities made by bilateral donors but through multilateral institutions. This set turned out also to be a comparatively empty one. What we had in mind in identifying the category was the Interim Fund for Science and Technology established by the August 1979 UN Conference on Science and Technology. This fund, placed under the wing of UNDP, was to receive bilateral contributions for multilateral allocation to third-world science and technology (including research) users. But neither the Interim Fund nor its would-be successor program has prospered, and there appear to be relatively few other instances of a similar procedural format. At the same time, in formulating the questionnaire we were not sufficiently clear in differentiating Type 4 from Type 2 cases. Our German respondents, in particular, confined Type 2 essentially to the CGIAR group, while treating most so-called "multi-bi" cases (bilateral contributions to specific multilateral programs) as Type 4 transactions.

Having set up the four procedural categories, the questionnaire then went on to seek further information under each heading. For example, it tried to press a question raised in the introduction: Does research funding aim mainly at problem solving or capacity building? However, a number of our respondents, perhaps put off by what they regarded as the awkwardness of dealing with our third broad procedural type as well as by the emptiness of the fourth, simply did not engage the procedural half of the survey with the same seriousness they did the substantive half. But let us glean what we can from their answers.

Procedural responses, collective and individual

The data collected in Table 8 are less representative of the whole respondent group than, for example, was Table 1. Obviously, the question of what sort of procedural score-keeping donors would wish to maintain is a question that those negotiating the establishment of a set of time series on external funding of development related research should consider carefully.

Meanwhile, as a better-than-nothing set of aggregates, Table 8 itself is of some interest, and so are the individual donor choices it summarizes. Enough has been said already about the aggregates. Of the two major channels for research support, direct transfers to developing country people and institutions is indeed the dominant one, and, certainly no opposite trend should be inferred from the table. The reason for the jump in Type 2 transfers after 1970 was simply that CGIAR only swung into action at that time.

TABLE 8

Assistance for Research by Procedural Categories
(values in millions of U.S. dollars)

		<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1984</u>
Number of responding agencies		6 ¹	6 ¹	7 ²	7 ³
Assistance to research by procedural types:					
1. Transfers to individual developing countries	\$	49.45	76.45	247.42	233.96
	%	95	66	82	78
2. Contribution to international research institutions and/or networks	\$	2.25	30.29	44.45	53.90
	%	4	26	14	18
3. Grants or payments to developing country individuals and/or organizations	\$	0.39	4.45	2.37	6.70
	%	0.5	4.1	1	2
4. Transfers by bilateral donors through multi-lateral institutions	\$	0.23	4.21	7.99	6.44
	%	0.5	4	3	2
5. Total	\$	52.3	114.4	302.23	301.00
	%	100	100	100	100

¹ IDRC, CIDA, ADB, FRG, IDB, UNDP

² IDRC, CIDA, ADB, FRG, IDB, UNDP, Japan

³ IDRC, CIDA, ADB, FRG, IDB, UNDP, SAREC

Individual donors estimates for the four procedural categories are gathered in Appendix C. Every one of the group except SAREC conforms to the collective pattern -- that is primary emphasis on direct transfers to developing countries, secondary emphasis on the international research networks. Only the Swedish agency differs, and it only inverts this pair of priorities; like all of the others, it leaves channels 3 and 4 bringing up the rear. The only near or relative exception in this latter regard is provided by the Germans: their volume of bilateral assistance to research provided through multilateral agencies in recent years is much more substantial than that of any of the rest of this group of donors. However, as indicated, this evidently reflects a different reading of the distinction between procedural channels 2 and 4.

As to the purpose of research assistance, the questionnaire recognized the difference between current research operations (problem solving) and research capacity building in the cases of transfers both to developing country and developed country recipients. It asked respondents to say how their outlays were divided between the two objectives. But the questionnaire did not offer guidance as to how this allocation should be made, and, although we had the issue in mind, it did not specifically mention the likelihood of overlap between the two purposes. This was an instance of where it was hoped the survey's "inductive" approach would flush out different rationales that could then be arrayed and perhaps, in due course, consolidated. But most of the respondents chose not to play out the operations/capacity choice in any very explicit way in their written replies to the questionnaire. As noted in the introduction, several of them had strong feelings on

the subject in the interviews. But these cannot be calibrated more precisely than was done in that earlier discussion.

Finally, it can be reported that the donors surveyed do indeed make wide and varied use of international institutes and research networks as channels for research aid. Of the long list of such units accumulated from our respondents for each benchmark year, the great majority of the entries were for CGIAR and/or the constituent international agricultural research institutes it represents. Virtually all of the latter were mentioned.¹³ The other international organizations listed by respondents are:

United Nations agencies including:

International Labour Organization (ILO)

Food and Agriculture Organization (FAO)

World Health Organization (WHO)

Pan American Health Organization (PAHO)

Economic Commission for Latin America (ECLA)

United Nations Institute of Technology and Research
(UNITAR)

United Nations Research Institute for Social Development
(UNRISD)

also:

The Andean Pact Commission

The Population Council

L'Institut du Sahel

Latin American Demographic Center

13 They included IRRI, CIMMYT, CIAT, IITA, CIP, ICRISAT, ILRAD, ILCA, ICARDA, IBPGR, ISNAR, and IFPRI.

IV. ISSUES FOR DECISION -- IF REGULAR TIME SERIES ON AID TO DEVELOPMENT RELATED RESEARCH ARE TO BE ESTABLISHED

Plainly, as to a possible follow-on to the present exercise, the first issue a potential instigator/organizer of regular data gathering in the development research funding field would have to decide is whether the establishment of serviceable time series on the subject would be worth the time and trouble. Moreover, it would not be enough for an instigating agency to decide, Yes; the ring leader would have to be joined by a sufficient preponderance of participating aid donors to make the data collection feasible.

The assumption here will be that these basic matters already are answered in the affirmative. The question then becomes, What issues will a willing set of donors need to sort out to establish and maintain a serviceable set of time series on development research funding? They include the following.

1. Auspices. As a proponent of such time-series building, the writer is more interested in seeing the effort made effectively and persistently than in who takes the lead. However, the lead agency would best be one that already conducts substantial and related statistical activity into which data on aid to development related research could be folded. The most obvious joint candidate would be OECD's Development Cooperation Directorate (DCD) and the committee of donor governments (DAC) it staffs. However, as next noted, there would be a particular need, as to sources, to reach beyond DAC's own membership.

2. Donor coverage. One would hope and expect, if DAC decided to take on the research-statistics project, that all of its members would

agree to participate. Clearly, a compilation of aid to research should include all of these so-called "traditional" bilateral donors. As discussed earlier, it should include aid to development research flowing from these governments' science-and-technology or other branches as well as their development cooperation branches. As noted, how complicated the networking within governments becomes will depend on whether the research funding tabulation is limited to ODA or extends, as well, to nonconcessional transfers and exchanges. (See issue No. 5a below.) The compilation of aid to research should also include various non-DAC donors. DAC now publishes statistics on Arab/OPEC aid; it would be hoped that members of that group would agree to detail their assistance to research. DAC's data on CMEA aid are acquired indirectly; it is not clear whether a research component could be factored out of these arrays. What would have to be urgently emphasized in a DAC-centered compilation of aid to development research, however, would be full and current access to information on multilateral funding of such research.

Some data on multilateral aid already appear in DAC/DCD publications. In the case of research the inclusion of such estimates would be particularly important -- for all the relevant multilateral agencies, not just those included in the present survey. Further, it would be essential for the major multilaterals to take an active part in the definitional, procedural, and other negotiations leading to the establishment of the research-funding time series. Most particularly, the World Bank would have to undertake to do a continuing job of identifying and collating the research components of its credits and loans for the new series to be satisfactory.

Still another donor-coverage issue would face the series designers: Whether or not to include such private funders of development research as some of the major foundations. Probably one would wish to keep the tabulation of official assistance separate and detachable, but it would be desirable to maintain a tabulation of private external funding of research alongside the official series.

3. Recipient country coverage. This should not be a major issue. If the series on research funding were a DAC series, it could use DAC's developing country list; if it were a UN series, the moderately different list employed, for example, by UNCTAD would serve.

4. Definition of "research." The issues have been highlighted earlier in the paper:

a. Sectoral coverage. Those launching new series on research funding would need to decide how much and which subsectoral detail they should undertake to provide regularly, and into which sectoral aggregates the detailed program estimates of all respondents should be gathered. As noted, the substantive breakdown employed in the present survey provoked no great debate among respondents. Evidently there was little sentiment that subsectors listed should be deleted, or other ones added, on the ground that they were not, or were, development-related. But the breakdown was far from ideal: in order to hold down the number of main categories, our questionnaire gave two of them (rural and area development, and technology, science and national policy) an apples-and-oranges character; it did not give agriculture per se the clean focus it deserved; and it submerged energy. Although Appendix D to this paper contains an hypothetical simplified substantive-procedural matrix for research funding data, the writer is not inclined to press any particular revised classification.

The point, instead, is for the data providers to take care to think through and talk out a serviceable sectoral format.

b. Support for problem solving or capacity building? The issue and the array of reactions to it have been spelled out earlier in the paper. There is, quite possibly, more convergence on this subject among donors than their shorthand responses suggest. But if so, this should be bargained out in the course of a time-series-establishing conference. If not, the conferees should consider whether and how respondents can be left options on this issue that do not wholly destroy the comparability of their estimates.

c. The boundary and the handling of overlaps between research and training/education. Are all expenditures on (or in behalf of) research institutions to be treated as support of research? Is all training of researchers research? Is all support of research-degree training aid to research? In cases where data do not permit the separation of institutional budgets into research and teaching components, what rules of thumb or analogies define the strength or level of commitment to research that should cause a unit's whole budget to be treated as research support? Is there any problem in distinguishing research from extension? These aspects of the research v. training issue have been elaborated earlier. A time-series-forming conference should seek to spell out a set of common guidelines.

d. The pure to applied spectrum. For "pure" read also "basic." For the whole distinction, read also (along lines elaborated earlier) the "research" v. (non-research) "studies" dichotomy. Or, along lines familiar in the S&T documentary literature, read the issue as one involving the identification of the "research" component within the "R&D" component of the "S&T" activity. All of these versions of

how, for data gathering purposes, one identifies the core that is development-related research within the larger set of investigative and analytical activities that external funders may also assist have been touched upon in the paper. Here too the establishers of time series have some guidelines that need drawing. Where applicable they may wish to specify these in terms of the kind of gradient of analytical-to-applications levels attributed herein to Mr. Boer of the Netherlands. For cases where analytical or study activities are not gradable in this sense, conferees should see whether they can agree on a convention that x percent of aid budgets spent on studies and/or science and technology shall be assumed to support research.

5. Definition and classification of the "assistance" and/or "support" that donors give development-related research.

a. Will the tabulation be limited to concessional assistance, i.e., ODA (and, if the earlier decision runs that way, to private grants)? Logically as well as from a data-gathering viewpoint, this is the cleaner and easier choice. However, it is not always the more realistic one; for example, World Bank research funding in a developing country may be much the same whether done via an IBRD loan or an IDA credit.

b. Given the decision on whether coverage will extend only to concessional transfers or beyond, will, as to the covered category, the assistance tabulated include, as one would expect, both financial and in-kind transfers, the latter consisting both of commodities and of services (as in the case of technical assistance)?

6. What should be the procedural scope of the series? An array of alternatives has been laid out in our questionnaire and in the section dealing with the survey's procedural results. The responses to

the questionnaire have suggested that this array invites some useful simplification -- one, for example, that consolidates the questionnaire's second and fourth channels for aid-to-research delivery into a single category involving international and/or multilateral networks and institutions. A possible such simplification is used in the substantive-procedural matrix sketched in Appendix D.

If the procedural aspect of the new aid-to-research time series were indeed to share the same matrix with the substantive aspect, then the question of procedural coverage would already have been settled. It would have been determined by the definition of research, by the series' definition of assistance, and by the sectoral coverage. Nevertheless the establishers of the new series would do well, under the procedural heading, to be sure they were agreed on what kinds of support for research by first-world institutions on third-world development would be included in their tabulations, and how much of what kinds of external training.

8. Timing. There is at least one more key issue the initiators of new time series on research funding would have to settle -- that of frequency. Other things equal, greater frequency would be preferred. On the other hand, the series certainly would not require monthly or even annual observations to be informative. Since some of the special information upon which the series would rest could be built into the detailed reports on their aid programs that members of DAC provide biennially, a two-year rhythm might serve well.¹⁴

14 Being spread through a two-year period, DAC country reports are not simultaneous. However, without serious distortion, what all of them during the two-year period had to say about research funding could be treated as representative of either the first or the second of the two years.

* * * * *

This concludes the check list of issues that it would be particularly important for the builders of time series on research funding to sort out. Other aspects of aid transactions would be pertinent to research funding, but by no means exclusively so. For example, aid for research could carry softer or harder terms -- even if it fell within the range of transfers defined as concessional. Aid for research would not, any more than other ODA, extend into the realm of military assistance. Research aid from a bilateral donor could be tied or not to procurement from donor sources. The effectiveness of research aid from a multiplicity of donors could be greatly enhanced by better coordination.

All of these and other standard dimensions of aid will in due course deserve attention in the research context. But the first task is to get a clearer, more nearly complete, and a recurring, empirical picture of what is going on. As our understanding of the complexity of development research grows, the evident importance of investments in research increases. With resources scarce, the importance of making the right allocative choices within aid-to-research budgets, and of improving the complementarity between donors' research budgets, also mounts. However, both research promotion and research coordination efforts must continue to fumble -- they will be illuminated only by intermittent flickers of ad hoc light -- until we have some workable time series on on-going research support activity.

**DEVELOPMENT COOPERATION AGENCIES 1984 INTERNATIONAL SURVEY
OF SUPPORT FOR DEVELOPMENT-RELATED RESEARCH**

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PURPOSE OF THE SURVEY

Research for development has been viewed as a growing priority by developing country governments. Official development assistance (ODA) flows have reflected this priority and it is thought that aid to developing country research has increased in recent years. But, at present, the data are limited and inconsistent. They do not provide a clear view of either the trends or the composition of funding for development-related research.

Accordingly, the present effort is to seek the assistance of the principal aid donor agencies in determining the magnitude and direction of their recent ODA flows to research and their intentions in this regard for the medium term future. The International Development Research Centre is supporting the enquiry to inform its own program planning but also because of the usefulness of such information to others in the development promotion community. The resulting report will be widely available to both aid donors and recipients and may provide a frame for some continuing data gathering by the secretariat to the Development Assistance Committee (DAC) of the Organisation for Economic Cooperation and Development (OECD).

ORGANISATION OF THE SURVEY INSTRUMENT

Respondents are requested to bear with the complexity of the attached survey instrument. The subject is inherently complex and involves concepts and boundaries that do not have widely agreed definitions. Misunderstanding can be minimised and the comparability of responses maximised if we define categories and concepts extensively, i.e., by enumerating their component categories or concepts. That is one characteristic that makes the attached questionnaire detailed. The other is that it is in the nature of a matrix, i.e., it employs two intersecting classifications (one substantive, the other procedural) of the same research-supporting activity. Under circumstances where we are filling what had been a near data-vacuum for the first time, the value of the detail is that it will lay a comprehensive base upon which simpler and more selective sequences of data gathering can then be built. In view of the potential value of the product, it is hoped respondents will not find the tables too tedious to complete.

For study purposes development research is defined as finding or creating development related information. It is recognised that activities such as education and training, in the subjects under research, and dissemination of research findings are integrally related to development research. However, the instrument is designed to capture 'core' research outlays, which can be compared across sets of donors, rather than data on these related activities of education and training or dissemination of findings. Two major categories of activities are used to organise the instrument. These are:

1. Procedural categories, which identify the forms of research-promoting aid activities in terms of form, purpose and direct recipients of transfers, and
2. Substantive categories, which include the research subjects, fields or sectors.

Format:

A tabular format is used in the survey instrument to ensure that all procedural entries are broken down by substantive topics, and vice versa. You are requested to complete two types of tables, one detailed in its procedural breakdown but broken only into summary groups by subject, and the other substantively detailed but with a comparatively aggregated procedural breakdown. These tables are to be completed for each of the time periods under study.

Time Periods:

It is important to the study objectives that data on both historical and future trends are provided. Because of the difficulty of extracting details of the research component from general estimates and budgets, we are requesting information for five "sample" years, rather than cumulative totals for periods of several years. The specific years are 1970, 1975, 1980, 1985 and 1990. Although it is understood that forward estimates are tentative, please attempt to make estimates as accurately as possible. The opportunity to comment on the quality of these forecasts, as well as on the representativeness of the sampled years for your organisation, is provided at the end of the survey instrument.

GUIDELINES TO THE SURVEY INSTRUMENTGeneral Guidelines:

As indicated, the survey instrument consists of two sets of tables for each of the five sample years. The first set is aimed at securing detailed data on respondents' procedures for supporting development research, broken down into four summary categories: transfers to developing countries, contributions to research institutions and networks, grants and payments to developed countries, and transfers through multilateral institutions by bilateral donors. This entire procedural array, in the first set of tables, is cross-classified into four summary substantive categories.

These substantive categories are broken down into detailed subject areas for the second set of tables. The first category, rural and area development, includes environment, natural resources, and human settlements and area planning. The second major subject area is technology, science and national policy. This includes engineering and technological adaptation and transfer, natural sciences, industrial development, governance, enterprise management, planning, economic policy and other applied social sciences. The third substantive area is human resources development and includes education and training (as objectives of development research), health and nutrition, income distribution, poverty and population. The final category is established to capture all development subject areas which do not fall under any of the other categories. There may be overlaps in the definition of categories, particularly for substantive categories. If there is an overlap, it is important to ensure that figures are not double counted.

The same data are requested for each set of tables, although the detailed breakdowns are the inverse of each other. As a result, the final total estimates for both sets should be equal. In addition to providing estimates of assistance, general and specific comments are requested. If additional space is required to make comments, use the general comment area provided at the end of the instrument.

Specific Instructions:

Base estimates on current U.S. dollars or local equivalent and express in thousands. If local equivalent is used, please specify the currency.

Do not leave blanks in tables if possible; use dashes to indicate unknown or unavailable data and zeroes to indicate no assistance was provided for category.

There may be overlaps in the definition of categories. If there is an overlap, allocate figures to one category and make sure the choice is specified.

1970 - 1

ASSISTANCE TO RESEARCH
PART I: PROCEDURALLY DETAILED ACCOUNTING OF DISBURSEMENTS

You are requested to report research assistance for 1970 for each procedural category and in total. Within each category, figures should be totaled and subtotaled by substantive category. All figures should be reported in thousands of current U.S. dollars or in local equivalent. Ensure that currency is specified, if a local equivalent is used. Please respond to every question whenever possible. Unknown, unavailable or not applicable data should be indicated by a dash (-). If you want to indicate no assistance, enter a zero(0).

I TRANSFERS TO INDIVIDUALS AND ORGANISATIONS IN INDIVIDUAL DEVELOPING COUNTRIES

Please enter the total transfers and transfer breakdowns to individuals and organisations in developing countries for 1970 in the following table.

Procedural Category	TOTAL TRANSFERS	Substantive Categories			
		Rural and Area Development	Technology, Science, National Policy	Human Resources Development	Other
TOTAL TRANSFERS					
A) Amount of total transfers which are:					
• commodities/foreign exchange					
• local currencies					
• services of expatriates					
• foreign training/travel					
B) Amount of total transfers for:					
• support of current operations					
• support of building capacity					
C) Amount of total transfers directly to individuals					
D) Amount of total transfers funded via projects					

Comment on or clarify the nature of capacity building activity.

Identify the principal recipient developing countries.

II CONTRIBUTIONS TO INTERNATIONAL RESEARCH INSTITUTIONS AND/OR NETWORKS

Please enter the contributions made to international research institutions and/or networks in 1970 in the following table. (Example: the international agricultural research institutes and CGIAR.)

Procedural Category	TOTAL CONTRIBUTIONS	Substantive Categories			
		Rural and Area Development	Technology, Science, National Policy	Human Resources Development	Other
TOTAL CONTRIBUTIONS					
A) Amount of total contributions which are:					
• foreign exchange					
• other					
B) Amount of total contributions for:					
• support of current operations					
• building capacity					

If contributions to international institutions are in forms other than foreign exchange, specify the principal modes of resource transfer.

Comment on or clarify the nature of capacity building activity.

Identify the principal recipient research institutions or networks.

III GRANTS OR PAYMENTS TO INDIVIDUALS AND ORGANISATIONS IN DEVELOPED COUNTRIES

Please enter the grants or payments in support of development research made in 1970 to individuals and organisations in developed countries in the following table.

Procedural Category	Substantive Categories				
	TOTAL TRANSFERS	Rural and Area Development	Technology, Science, National Policy	Human Resources Development	Other
TOTAL GRANTS/PAYMENTS	_____	_____	_____	_____	_____
A) Amount of total grants to:	_____	_____	_____	_____	_____
• support current research	_____	_____	_____	_____	_____
• strengthen research capacity of suppliers	_____	_____	_____	_____	_____
B) Of (A) the total grants and payments to individuals	_____	_____	_____	_____	_____
C) Of (A) the total grants and payments to individuals or organisations not of donor country	_____	_____	_____	_____	_____

Classify or characterize the individuals in entry (B) as appropriate.

Identify principal third country recipients of payments to individuals or organisations not belonging to donor country.

IV TRANSFERS FOR DEVELOPMENT RESEARCH ACTIVITIES MADE THROUGH MULTILATERAL INSTITUTIONS, IN THE CASE OF BILATERAL DONORS

Please enter transfers made by bilateral donors for development research activities not included in Questions I, II and III above, and channeled through multilateral institutions via contributions for research. (Example: the Interim Fund for Science and Technology.)

Procedural Category	Substantive Categories				
	TOTAL TRANSFERS	Rural and Area Development	Technology, Science, National Policy	Human Resources Development	Other
TOTAL TRANSFERS	_____	_____	_____	_____	_____

Identify or comment on principal recipients.

V TOTAL ASSISTANCE TO DEVELOPMENT RESEARCH FOR ALL PROCEDURAL CATEGORIES.

Please enter the grand total for all development research assistance in the following table by adding the totals of Questions I, II, III and IV. Then, if the research assistance is specific to geographic regions, specify the amounts according to the appropriate region.

Please note that the regional totals need not equal the grand total. In determining regional totals, ensure that double counting does not occur.

Substantive Category	Procedural Categories				
	GRAND TOTAL OF ASSISTANCE	Transfers to Developing Countries	Contributions to Research Institutions and Networks	Grants and Payments to Developed Countries	Transfers via Multilateral Institutions by Bilateral Donors
GRAND TOTAL OF ASSISTANCE	_____	_____	_____	_____	_____
Subtotals:					
A) Latin American/Caribbean	_____	_____	_____	_____	_____
B) Sub Sahara Africa	_____	_____	_____	_____	_____
C) Middle East	_____	_____	_____	_____	_____
D) South Asia	_____	_____	_____	_____	_____
E) Southeast Asia	_____	_____	_____	_____	_____
F) Other geographic areas	_____	_____	_____	_____	_____

If amounts are entered on line F, please specify which geographic areas.

1970 - 3

**ASSISTANCE TO RESEARCH
PART 2: SUBSTANTIVELY DETAILED ACCOUNTING OF DISBURSEMENTS**

You are requested to report research assistance for 1970 for each substantive category and in total. Within each category, figures should be totaled and subtotaled by procedural category. All figures should be reported in thousands of current U.S. dollars or in local equivalent. Ensure that currency is specified, if a local equivalent is used. Please respond to every question whenever possible. Unknown, unavailable or not applicable data should be indicated by a dash (-). If you want to indicate no assistance, enter a zero(0).

RURAL AND AREA DEVELOPMENT

Please enter the total assistance for rural and area development and components of rural and area development for 1970 in the following table.

Substantive Category	TOTAL	Procedural Categories			
		Transfers to Developing Countries	Contributions to Research Institutions and Networks	Grants and Payments to Developed Countries	Transfers via Multilateral Institutions by Bilateral Donors
TOTAL FOR RURAL AND AREA DEVELOPMENT	_____	_____	_____	_____	_____
Subtotals:					
A) Agriculture and rural development	_____	_____	_____	_____	_____
• agricultural science	_____	_____	_____	_____	_____
• rural development/ social sciences	_____	_____	_____	_____	_____
• fisheries	_____	_____	_____	_____	_____
• forestry	_____	_____	_____	_____	_____
B) Environment, ecology	_____	_____	_____	_____	_____
C) Natural resources	_____	_____	_____	_____	_____
• energy related	_____	_____	_____	_____	_____
D) Transport, communications	_____	_____	_____	_____	_____
E) Human settlements, planning	_____	_____	_____	_____	_____

If contributions to research on employment are included in the figures for this substantive category, please indicate how much and in which subject area. Contributions to research on employment may be included under any of the substantive categories. Ensure figures are not double counted.

II TECHNOLOGY, SCIENCE AND NATIONAL POLICY

Please enter the total assistance for technology, social science and engineering, and component areas for 1970 in the following table.

Substantive Category	TOTAL	Procedural Categories			
		Transfers to Developing Countries	Contributions to Research Institutions and Networks	Grants and Payments to Developed Countries	Transfers via Multilateral Institutions by Bilateral Donors
TOTAL FOR TECHNOLOGY, SCIENCE, NATIONAL POLICY	_____	_____	_____	_____	_____
Subtotals:					
A) Engineering, technology including adaptation and transfer	_____	_____	_____	_____	_____
B) Natural sciences	_____	_____	_____	_____	_____
C) Industrial development	_____	_____	_____	_____	_____
D) Management, planning, economic policy, applied social sciences	_____	_____	_____	_____	_____

If contributions to research on employment are included in the figures for this substantive category, please indicate how much and in which subject area. Contributions to research on employment may be included under any of the substantive categories. Ensure figures are not double counted.

1970 - 4

III HUMAN RESOURCES DEVELOPMENT

Please enter the total assistance for human resources development and component areas for 1970 in the following table.

Substantive Category	TOTAL	Procedural Categories			
		Transfers to Developing Countries	Contributions to Research Institutions and Networks	Grants and Payments to Developed Countries	Transfers via Multilateral Institutions by Bilateral Donors
TOTAL FOR HUMAN RESOURCES DEVELOPMENT	_____	_____	_____	_____	_____
Subtotals:					
A) Research in education, training	_____	_____	_____	_____	_____
B) Health and nutrition	_____	_____	_____	_____	_____
C) Income distribution, poverty, employment	_____	_____	_____	_____	_____
D) Population	_____	_____	_____	_____	_____

Note references to employment under sections I and II above. If research on employment is included in those sections, do not double count here.

IV OTHER DEVELOPMENT RELATED SUBJECTS

Please enter the total assistance given to development related subjects which do not fit into substantive categories I, II and III.

Substantive Category	TOTAL	Procedural Categories			
		Transfers to Developing Countries	Contributions to Research Institutions and Networks	Grants and Payments to Developed Countries	Transfers via Multilateral Institutions by Bilateral Donors
TOTAL FOR OTHER DEVELOPMENT SUBJECTS	_____	_____	_____	_____	_____

Specify the subjects included in this category.

V GEOGRAPHIC BREAKDOWN OF ASSISTANCE TO DEVELOPMENT RESEARCH

Please enter the grand total for all development research assistance in the following table by adding the totals of questions I, II, III and IV. Then, if assistance is specific to geographic regions, specify the amounts according to the appropriate region.

In determining regional totals, ensure that double counting does not occur. Please note that the regional totals need not equal the grand total.

Substantive Category	GRAND TOTAL OF ASSISTANCE	Procedural Categories			
		Transfers to Developing Countries	Contributions to Research Institutions and Networks	Grants and Payments to Developed Countries	Transfers via Multilateral Institutions by Bilateral Donors
GRAND TOTAL OF ASSISTANCE	_____	_____	_____	_____	_____
Subtotals:					
A) Latin American/Caribbean	_____	_____	_____	_____	_____
B) Sub Sahara Africa	_____	_____	_____	_____	_____
C) Middle East	_____	_____	_____	_____	_____
D) South Asia	_____	_____	_____	_____	_____
E) Southeast Asia	_____	_____	_____	_____	_____
F) Other Geographic Areas	_____	_____	_____	_____	_____

please specify other geographic areas which may receive assistance.

Identical questionnaire forms were sent to respondents for
1970, 1975, 1980, 1985, 1990

Only the set for 1970 is included here.

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A GUIDE TO DONOR AGENCIES
AND THEIR RESPONSES

<u>BILATERAL</u>	<u>YEARS</u>
CIDA	1970, 1975, 1980, 1985
IDRC	1970, 1975, 1980, 1984
FRANCE	1983
WEST GERMANY	1970, 1975, 1980, 1983
JAPAN	1980
NETHERLANDS	1975, 1980, 1984
SWEDEN	1984
U.K.	1980, 1984
USAID	1984
 <u>MULTILATERAL</u>	
ADB	1970, 1975, 1980, 1984
IDB average of the years:	1970-73, 74-77, 78-81, 82-84
UNDP	1970, 1975, 1980, 1985
WORLD BANK	1984

APPENDIX B

Assistance for Research by Agency and by Broad Sector
(U.S. \$000)

IDRC		1970	1975	1980	1984
R & A Development	I	1767	12020	16837	25401
	%	54	52	66	54
Tech. Sc.	II	497	3515	3104	7382
	%	15	15	12	16
HRD	III	956	6830	6742	14400
		30	30	22	29.5
Other	IV	39	663		189
		1	3		0.5
Total	V	3259	23028	26683	47372
		100	100	100	100

CIDA		1970	1975	1980	1984
R & A Development	I	6339	12525	12003	28884
	%	93	80	90	85
Tech. Sc.	II	113			1612
	%	1			5
HRD	III	326	59	21	1074
	%	5	0.5	0.5	3
Other	IV		3126	1255	2564
	%		19.5	9.5	7
Total		6778	15710	13279	34134
		100	100	100	100

ADB		1970	1975	1980	1984
R & A Development	I	4141	1565	3218	5366
	%	97	99	97	73
Tech. Sc.	II				691
	%				9
HRD	III				345
	%				5
Other	IV	117	15	97	988
	%	3	1	3	13
Total		4258	1580	3315	7400
		%	100	100	100
W. GERMANY		1970	1975	1980	1984
R & A Development	I	4222	10171	27249	27761
	%	16	24	21.5	24
Tech. Sc.	II	1628	4861	49644	43359
	%	6	12	39	37
HRD	III	10916	10568	20975	17164
	%	41	25	16.5	15
Other	IV	9709	16234	29220	29826
	%	37	39	23	24
Total		26475	41834	127088	118110
		100	100	100	100

NETHERLANDS			1970	1975	1980	1984
R & A Development	I			23675	49664	55692
		%		66	67	69
Tech. Sc.	II			1181	12002	17854
		%		3	16.5	22
HRD	III			9104	5916	4303
		%		25	8	5
OTHER	VI			2195	6205	3209
		%		6	8.5	4
TOTAL	V			36155	73787	81058
		%		100	100	100
UK/ODA			1970	1975	1980	1984
R & A Development	I				19613	27529
		%			53	72
Tech. Sc.	II				7182	2466
		%			19	7
HRD	III				6197	7990
					17	21
Other	IV				4212	
					11	
Total					37206	37985
		%			(100)	100

SAREC		1970	1975	1980	1984
R & A Development	I				6392
	%				32
Tech. Sc.	II				2832
	%				14
HRD	III				10308
	%				52
Other	IV				460
	%				2
Total	V				19992
	%				100

JAPAN		1970	1975	1980	1984
R & A Development	I			54454	
	%			63	
Tech. Sc.	II			10769	
	%			13	
HRD	III			20725	
	%			24	
Other	IV				
Total				85948	
	%			100	

IDB		1970	1974	1980	1984
R & A Development	I	2398	14668	8532	47000
	%	22	45	18	64
Tech. Sc.	II	8446	17880	38418	26000
	%	78	54	82	34.5
HRD	III		209		1000
	%		0.6		1.5
Other	IV		59		
			0.4		
Total	V	10844	32816	46950	74000
	%	100	100	100	100
<u>UNDP</u>		1970	1974	1980	1984
R & A Development	I	225	227	331	258
	%	63	55	53	52
Tech. Sc.	II	53	99	179	157
	%	13	24	29	32
HRD	III	97	78	106	51
	%	24	18	16	10
Other	IV	2	11	8	31
	%	0.5	3	1.5	6
Total	%	407	415	624	497
		100	100	100	100

France	1970	1975	1980	1984
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R & A Development	I			122572
	%			(60)
Tech. Sc.	II			46417
	%			(23)
HRD	III			32818
	%			(16)
Other	IV			2345
	%			(1)
Total	V			204162

World Bank (partial)	1970	1975	1980	1984
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R & A Development	I			164000
Tech. Sc.	II			--
HRD	III			5000
Other	IV			--
Total				169000

USAID		1970	1975	1980	1984
R & A Development	I %				203000 (79)
Tech. Sc.	II				--
HRD	III %				53000 (21)
Other	IV				--
Total	V				256000

APPENDIX C

Assistance for Research by Agency & by Procedural Categories
(U.S. \$000)

I TDgC=Transfer to developing Countries
 II CIRIN= Contributions to International Institutions
 III TDdC=Transfers to Developed Countries
 IV TMI=Transfers to Multilateral Institutions

IDRC	1970	1975	1980	1984
I	1781	8965	16573	32880
%	55	38.5	65	69.5
II	1333	10501	8119	10630
%	41	46	31.5	22.5
III	145	3401	777	3619
%	4	15	3	7.5
IV		161	209	243
%		0.5	0.5	0.5
Total	3259	23028	25678	47373
	100	100	100	100

CIDA	1970	1975	1980	1984
I	5958	6765	4094	21735
%	88	43	31	64
II	819	8945	9185	12399
%	12	57	69	36
III				
%				
IV				
%				
Total	6777	15710	13279	34134
%	100	100	100	100

ADB	1970	1975	1980	1984
I	4258	826	3293	7026
%	100	52	22	95
II		754		374
%		48		5
III				
%				
IV				
%				
Total	4258	1580	3315	7400
%	100	100	100	100

W. GERMANY	1970	1975	1980	1984
I	26000	32993	106919	101563
%	98	79	85	86
II		3747	9954	9094
%		9	8	8
III	248	1049	1594	1256
%	1	2.5	1	1
IV	227	4045	7783	6197
%	1	9.5	6	5
Total	26475	41834	126250	118110
	100	100	100	100

IDB	1970	1975	1980	1985
I	10843	26498	39998	64398
%	100	81	85	88
II		6346	7175	9132
%		19	15	12
III			15	
%				
IV				
%				
Total	10843	32844	47188	73530
	100	100	100	100

JAPAN	1970	1975	1980	1985
I			75929	
%			88	
II			10019	
%			12	
III				
%				
IV				
%				
Total			85948	
			100	

SAREC	1970	1975	1980	1985
I				5876
%				30
II				12270
%				61
III				1846
%				9
IV				
%				
Total				19992 100

UNDP
((\$000))

Part 1: Procedural

	1970	1975	1980	1984
I	405	404	616	466
II				
III				
IV				
Total	405	404	616	466

APPENDIX D

A Possible Modified Matrix For Aid-to-Research Reporting

Channel	Developing country organizations and persons	International and/or multi- lateral organizations and networks	Organization in developed countries	Total
Sector				
I. Rural development				
II. Infras- structure & area develop- ment (in- cluding urban, transport, energy)				
III. Science, technology, industry				
IV. Human re- sources development				
V. Policy, planning, management				
Total				

