

AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D. C. 20523  
BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY

Batch 57

1. SUBJECT  
CLASSI-  
FICATION

A. PRIMARY

B. SECONDARY

TEMPORARY

2. TITLE AND SUBTITLE

Research networks

3. AUTHOR(S)

(101) AID/TA

4. DOCUMENT DATE

1972 9

5. NUMBER OF PAGES

9p.

6. ARC NUMBER

ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS

AID/TA

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)

(In Technical assistance guidance ser., TAGS-1)

9. ABSTRACT

(Development assistance R&D)

Research networks mesh international research and related informational and technical assistance efforts. Collaboration between research and related activities in more-developed countries and those in lesser-developed countries can produce high priority products, strengthen lesser-developed countries' research capabilities, and re-orient the research of the more-developed countries toward the situations and needs of the lesser-developed countries. This report describes the importance of joint research programs and the advantages of research networks which draw on a variety of talents and experiences that are mutually reinforcing. It is part of the Technical Assistance Guidance Series which presents methods and techniques to make technical assistance processes and relationships more effective.

10. CONTROL NUMBER

PN-AAD-492

11. PRICE OF DOCUMENT

12. DESCRIPTORS

13. PROJECT NUMBER

14. CONTRACT NUMBER

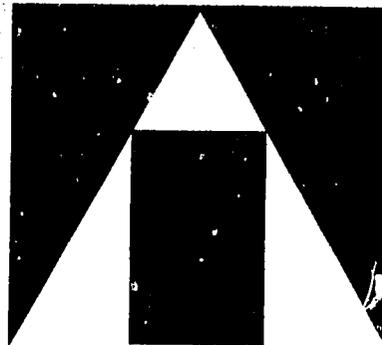
AID/TA

15. TYPE OF DOCUMENT

**TAGS-1**

# **RESEARCH NETWORKS**

**November 1972**



**TECHNICAL ASSISTANCE  
GUIDANCE SERIES**

**Bureau for Technical Assistance  
Agency for International Development  
Washington, D.C. 20523**

The Technical Assistance Guidance Series presents generic methods and techniques which have been found to make technical assistance processes and relationships more effective. TAGS issuances are advisory, not mandatory. Each represents guidance to be applied by TA planners, advisors and practitioners as they find it advantageous to do so. TA personnel are encouraged to make available to host country officials issuances of relevance to their concerns. Correspondence concerning TAGS should be addressed to the Technical Assistance Methodology Division, T.A. Bureau, A.I.D., Washington, D.C. 20523.

Originating Office for TAGS - 1: AA/TA

TAGS-1  
22 September 1972

## RESEARCH NETWORKS

### SUMMARY

The research network approach is a potent device for achieving a meshing of research and related informational and technical assistance efforts in all technical fields, and should be used for work on LDC problems as fully as circumstances permit.

### PURPOSE

The Administrator's Memorandum of 1/24/72 on "Reform of the U. S. Economic Assistance Program," and the 9/14/72 Agency policy paper, "Guidelines on Strengthening the Innovation and Research Thrust of AID Programs" both call for increased Agency support and use of international research networks.

The purpose of this issuance is to increase understanding of the potential and means of strengthening research networks around the world, i.e. collaborative associations of research and related activities of institutions which are working on common or closely related problems in the U. S. and other more-developed countries (MDCs), together with those in A.I.D.-assisted and other lesser-developed countries (LDCs), and including appropriate regional and international institutions, in order to:

- 1) produce high priority research products
- 2) strengthen LDC research capabilities, and
- 3) re-orient the research of the MDCs toward LDC's situations and needs.

### TYPES OF COLLABORATION

The linkages or collaboration between the elements of a research network may be informal or formal. Where feasible, the most potent binding force and impact comes from joint research projects on major LDC problems, linking together the science and technology and research capacity of the advanced countries with LDC elements responsible for producing better technologies for local application. Linkages may also include casual exchanges of research materials and information, exchange visits, advisory services from the more to the less advanced elements in the network, training programs, use of common information services, provision of research sites, joint seminars or workshops, program coordination sessions--or any kind of unilateral or reciprocal reinforcing activity from one research unit to others in the network.

This network approach is favored by the self-interest of all of the participating countries, and of the scientists themselves, in the evolution of interlocking systems for building knowledge and testing technologies. Research findings can thus be produced which can in turn be translated into useful end products by the total array of countries, ranging from the least to the most developed.

### EXISTING NETWORKS IN AGRICULTURE

The most highly developed research networks currently supported by development assistance agencies are attacking selected worldwide agricultural problems, primarily seeking improved yield and quality of plant varieties. This is being done by welding together three echelons of research activity--in the U. S. and other MDCs, in the LDCs and, where appropriate, in intermediate international or regional centers--in a mutually reinforcing attack on major LDC agricultural problems. Full advantage is thereby taken of

opportunities for appropriate divisions of labor within and between the echelons based on the comparative strengths of the respective participating elements.

The agricultural research networks have one or more "nerve centers," or lead institutions, of special excellence and mobilized research power which provide scientific leadership, systematic information exchange, training and advisory services, or other coordinating or supporting services for the network. These "nerve centers" may be leading U. S. or other MDC institutions, or international institutes. For many problems, the best of the LDC research institutions should be playing this "nerve center" role as soon as it becomes feasible to do so.

Increasingly, these networks are providing major training and technical support services for current agricultural production programs in LDCs.

#### SOME SUGGESTED PRINCIPLES OF ACTION

The whole set of research network activities should be geared to strengthening LDC research capabilities by suitable types of participation and gradual expansion of responsibilities. Development assistance can contribute to this purpose by strengthening the various types of linkages, working from key vantage points at all echelons, and by discouraging the multiplication of scattered research efforts in the LDCs that are unconnected to efforts elsewhere. An exception to the latter might be research that is integral to a particular development project or set of projects, and sufficient for that purpose. One key role for development assistance that can give maximum leverage to assistance funds in suitable circumstances is to strengthen the capacity of the "nerve centers," to lead the joint research and LDC institution building effort--including the tying in of supportive participation by U. S. centers of excellence.

The basic principle is to seek the synergistic force of synchronized research efforts that draw on a wide variety of talents and situation experiences that are mutually reinforcing, and to bring the power of U. S. and other scientific resources effectively to bear on developing country problems. Without a well developed set of such linkages, few LDCs could advance very rapidly in either producing useful research products or developing their own research capabilities. The requirements of scientific talent, research facilities and time are much greater than they can meet.

To achieve the most powerful research thrust and a fully effective interplay of development research and operations in major problem areas, integrative linkages of AID and non-AID financed efforts should be sought in three dimensions:

- 1) The vertical integration between the three echelons or tiers of activity described above-- LDC research, international institutional research, and MDC research.
- 2) The horizontal integration at each echelon with related research activities.
- 3) A combination of horizontal and vertical integration with non-research activities such as training and advisory services and informational exchanges, addressed to the same or related problems.

Thus, the research networks should be built within a wider set of networks of mutually reinforcing activities seeking to reduce the major problems impeding LDC developments.

### JOINT RESEARCH PROGRAMS

The most powerful device for establishing and strengthening research networks is the formulation of joint research programs in pursuit of clear goals mutually articulated by the potentially participating institutions and funding entities.

The need for this more precise collaborative approach reflects the fact that on many important problems, there are several institutions (aggregating to tremendous total resources) in the U. S., the LDCs and elsewhere, each working on the same general problem but in only loose and informal contact with the others, even though desiring the same general result. This has four serious negative consequences. It:

- 1) Encourages continuation of basic separation of MDC from LDC research, so that research findings and technology evolving from the former is of minimal direct value to the latter.
- 2) Wastes resources on largely replicative but not genuinely mutually supportive efforts (replication for certain purposes is essential in research, but only if those purposes are built into the design of the undertaking).
- 3) Makes it extremely difficult to concentrate an adequate critical mass to "break through" on problems, as efforts and resources of individual institutions are splintered into too many pieces.
- 4) Precludes adequate division of labor on the basis of special talents, resources or interests of the principal investigators, which is the key to their effective individual as well as aggregate performance.

An ideal instrument for overcoming these shortcomings and for greatly augmenting total research productivity is a collaborative research program, jointly agreed upon by the participating LDC and U. S. or other institutions. Agreement on basic over-all research goals and methodology would provide the basis for agreement on division of effort among the participating institutions. The contribution of each would be based largely on its special interests and capabilities, although all key methodological requirements would have to be properly covered in some fashion. The bulk of the financing resources would come from, and out of the self-interest of, the participating institutions; but external (e.g. AID) resources could be provided for a variety of essential purposes, especially to induce the formulation and following of project methodology and design necessary to achieve full potentiality of the activity.

#### ADVANTAGES OF RESEARCH NETWORKS

The advantages of this type of organization of research effort, particularly of the joint research program, go beyond its impact in greatly increasing the total product from research resources used. Some of the major advantages are:

- It provides research products ready to use in a number of places, as research resulting from such "network" activities is developed within and tested against situations in the several participating LDCs. (Even research done within any single LDC normally must be modified and adapted before it is applicable to other LDCs.)
- It provides optimum encouragement to ultimate use of research results by involving the local

institutions in all stages of the research process--including planning that builds consideration of ultimate uses into the design of the project itself.

- It provides participating LDCs significant opportunities to really "break-through" on their country's version of the selected problems, by harnessing supporting resources otherwise beyond their reach, thereby increasing the worthwhileness and likelihood of good local support.
- It provides the optimum possible opportunity for professional development of participating LDC researchers, including experience with organizational and management aspects of complex research undertakings.
- It provides stronger opportunities for mutual reinforcement of research and research training with support for current operational concerns.
- Very importantly, by bringing LDC and more developed country research and operational personnel and institutions into such intimate, functional interrelationships, it lays the groundwork for substantial continued interrelationships beyond the lifespan of AID project support.