

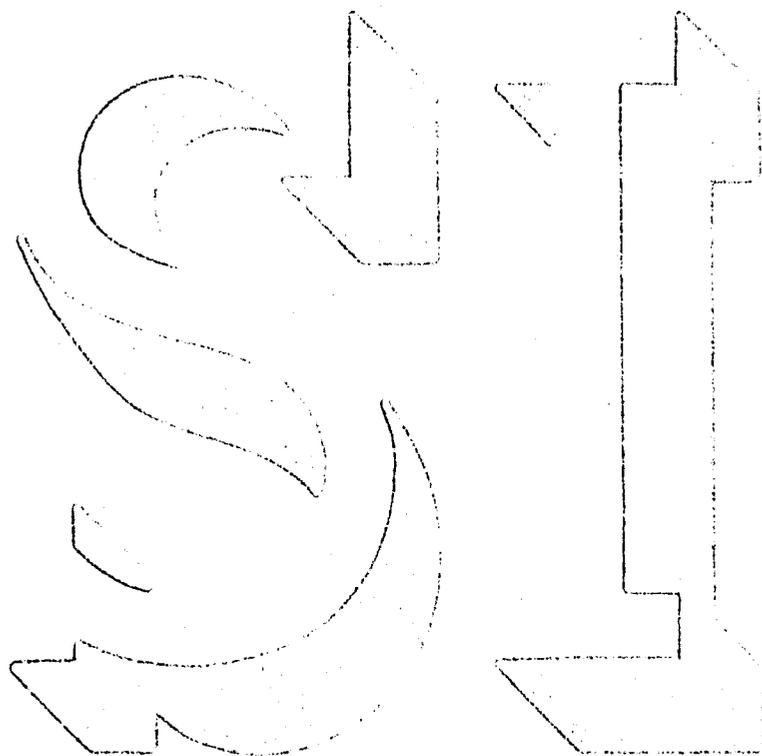
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REPORT ON THE MIDTERM EVALUATION
OF THE
APPLIED DIARRHEAL DISEASE RESEARCH PROJECT

HARVARD INSTITUTE FOR
INTERNATIONAL DEVELOPMENT

CAMBRIDGE, MASSACHUSETTS

MARCH 1968



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ADDR MIDTERM EVALUATION

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	1
2. INTRODUCTION	5
3. EVALUATION PROTOCQL	6
3.1 TEAM MEMBERS	6
3.2 PROCEDURES	7
4. EVALUATION FINDINGS AND CONCLUSIONS	8
4.1 FINDINGS & DISCUSSIONS	8
4.1.1 PROJECT GOALS AND RESEARCH THEMES	8
4.1.2 QUALITY AND AREAS OF RESEARCH OF FUNDED GRANTS	13
4.1.3 RESOURCES, MANAGEMENT AND OPERATIONS OF THE RESEARCH GRANT PROGRAM	16
4.1.4 COMMUNICATION, DOCUMENTATION AND DISSEMINATION OF INFORMATION	19
4.2 CONCLUSIONS AND LESSONS LEARNED	20
5. RECOMMENDATIONS	22

1. EXECUTIVE SUMMARY

The Cooperative Agreement between the U.S. Agency for International Development (A.I.D.) and the Harvard Institute for International Development (HIID) has been taken into effect since September 1985. Under this Agreement, the Applied Diarrheal Disease Research (ADDR) Project is managed by HIID which entered into a consortium with the Johns Hopkins University, School of Hygiene and Public Health (JHU) and the Tufts University - New England Medical Center (TUFTS). This project is expected to result in improvement of diarrheal disease control, completion of research projects in the priority areas, improvement of coordination between A.I.D. and other donors on diarrheal disease research activities and establishment of institutional capacity to conduct research in emphasis countries.

Currently, ADDR is active in seven countries: Indonesia, Thailand, Pakistan, Peru, Mexico, Nigeria, and Kenya. As of this evaluation, ADDR has funded twenty research projects, conducted two proposal development workshops, and carried out project evaluations on two A.I.D. funded diarrheal disease research projects.

The mid-term evaluation was conducted during the week of March 14-18, 1988, two and half years after the inception of the project. The Team followed closely the scope of work prepared by A.I.D. (Annex 1). The evaluation process looks backward to what was accomplished -- and not accomplished -- and forward to foresee how activities should evolve in the remaining years of the Project or even further, until all funds committed are invested.

The ADDR Project reflects the A.I.D. health policy and assistance program for child survival in poor societies of developing countries. It also responds to A.I.D.'s research policy in health because it looks for new technologies for a leading cause of child death, namely, diarrheal disease, and to improve the delivery and effectiveness of existing technologies. It places strong emphasis in research through integration of the biomedical, behavioral, and epidemiological sciences, thus covering major determinants of the condition. The outcomes of these studies may become one of the most important contributions of the Project.

The Evaluation Team supports the three broad priority themes selected for ADDR: a) home use of fluids and foods during diarrhea; b) invasive and chronic diarrhea; c) changing behaviors in regard to prevention and treatment of diarrhea. Nevertheless, it recommends a fourth one: studies on intervention and prevention of diarrheal disease. The subjects to be considered include water supplies, excreta and solid waste disposal, personal hygiene, food handling and protection, measles immunization, supplementary feeding, and other aspects of convalescent care.

The Team also recommends that a common definition of chronic diarrhea be agreed upon by TAG members and other experts in the field, in order to determine the prevalence, indicators of risk, incidence, and mortality rates, and perform comparative epidemiological studies. Research is needed for better knowledge on the etiology, pathogenesis, and effective treatment of this condition.

Despite that the majority of approved studies are yet to show their outcomes, the value that the ADDR Project will have for less developed countries can be foreseen. In sum, it will improve the research capacity of the investigators and the institutions they belong to; develop integrated models covering different disciplines relevant to diarrheal disease; provide better basis for the teaching-learning process; show the significance of nutrition education for changing behaviors; and persuade decision-makers and program managers of the need for changing policies and strategies leading to the use of more effective technologies, or formulating new ones.

The Evaluation Team recommends that the overall goal of the ADDR Project not be modified because it is sound, responds to an urgent need in developing countries, and reflects the A.I.D. health and research policies. However, the Team indicates a series of changes in the design of the Project, some of them structural and others functional in nature, that should contribute to improve significantly the quality of research proposals, the process of approval, a stronger association between the principal investigator and the consultant and thus, a more effective technical monitoring of each study, data management and analysis, and the use of outcomes for policies and programs of diarrheal disease control. The report details the different proposals for a better design of the Project.

The 22 proposals approved up to the moment of the evaluation of ADDR meet, according to the Team, the mandate of the Project. The issues addressed may have relevance for diarrheal disease programs in the countries in which they were designed. In general, those proposals with a specifically designated consultant-mentor were better prepared and more limited in their objectives, making them more likely to be completed successfully.

The integration of epidemiology and social science in some projects has not been adequate and appears lopsided, despite that the interdisciplinary collaborative approach to diarrheal disease is one of the main objectives of ADDR.

A series of suggestions to strengthen the development of the Project are contained in the Team's Report. This includes the identification of promising young researchers already trained by other international programs; the need to improve the research capacities of lead institutions in the emphasis countries; the building upon successful research efforts translating findings into policies and programs, when appropriate, and designing new studies. The Evaluation Team deems proposal development skill enhancement and data management-analysis workshops valuable ADDR activities consistent with Project objectives. In conjunction with the workshops, the Team encourages development of manuals for them, research-issue lists, and exemplary case-study protocols -- in addition to the distribution of key articles and research reviews to participants.

The report includes concrete suggestions for state-of-the-art papers on issues of importance for diarrheal disease research contracted by ADDR. The only one available on the anthropological literature was academically sound but uncritical, and it focused little on methodology.

At the time of this mid-point evaluation, the Team considers that ADDR has explored several potential mechanisms for accomplishing its goals with less than optimal results, but that the prospects for success during the

second half of the Project are real and substantial. The fact that, at present, 103 research proposals have been made, and 22 of them approved until now, shows that the models designed by ADDR are becoming effective and that the methodology for protocol review and development has achieved considerable success.

In the area of management and coordination, A.I.D. has not been as efficient as needed, mainly because since its inception the Project has had three Cognizant Technical Officers (CTOs), some of them having other important responsibilities in the Agency. The Evaluation Team strongly recommends that the CTO implements the duties specified in the Cooperative Agreement that call for a close interactive relationship with the Recipient.

Relations between HIID, Johns Hopkins University, and Tufts University -- the Recipient and Subrecipients -- for the assignment of responsibilities have improved steadily since the beginning of the Project. There is a clear need, at present, to specify the role of Tufts, taking into account the actual and forthcoming scope of work of ADDR.

The Technical Advisory Group (TAG) has been a valuable resource to ADDR for defining and facilitating a multidisciplinary approach to research, in accordance with the causes and determinants of infectious diarrhea. At the same time, the TAG has assisted the Project in examining, improving and approving proposals from selected investigators and supporting institutions in the emphasis countries. The evaluation team makes recommendations related to the structure and procedures of the TAG, in order to improve further its effectiveness.

The need for reviewing several projects financed by A.I.D. having the same general research objectives, namely PRITECH, PRICOR, CCCD, WHO, CCD, and ADDR, has become apparent. It is justified because collaboration between institutions would be easier if their work was complementary rather than competitive. Under these bases, the evaluation team recommends that A.I.D. examines its current policy related to these projects.

The Recipient has submitted regularly the different reports required in the Cooperative Agreement, as well as the annual workplans, these being particularly well designed. However, the Evaluation Team would urge the ADDR core staff to write field visit reports -- as consultants do -- and send them to the CTO in order to build up the history of the Project as a whole, and of every study developed in the seven emphasis countries. Beyond the benefits to the people that all of them may bring, and the scientific breakthroughs that may occur, the goal of strengthening the association of the USA and developing countries through sound research for social development and well-being is also of significance. Furthermore, the Team deems highly advisable that the CTO reviews the research proposals before being submitted for approval to the TAG.

The Team notes with satisfaction the encouraging comments of four USAID Missions regarding ongoing applied research on diarrheal disease in the respective countries sponsored by the Project.

2. INTRODUCTION:

The cooperative Agreement No. DPE-5952-A-00-5073-00 between the United States Agency for International Development (A.I.D.) and the Harvard Institute for International Development (the Recipient) has been in effect since September 30, 1985. The total estimated cost for the Agreement is \$9,998,630 for a five year period.

This project is expected to assist A.I.D. and host countries to establish or improve diarrheal research activities through (1) short term technical support activities, (2) management of a research grant program, and (3) institutional and individual resources development in less developed countries (LDCs).

At the end of the project, it is expected that the implemented programs will result in (1) improvement of diarrheal disease control, (2) completion of research projects in the priority areas, (3) improvement of coordination between A.I.D. and other donors on diarrheal disease research activities, and (4) establishment of institutional capacity to conduct research in emphasis countries.

The HIID entered into a consortium with the Johns Hopkins University School of Hygiene and Public Health (JHU) and the Tufts University-New England Medical Center (TUFTS). JHU and TUFTS staff played active roles in representing ADDR abroad and guiding proposal development and research activities.

A Technical Advisory Group (TAG) of 10 members composed of equal numbers of medical and social scientists have met 5 times at 6 month intervals to review and recommend funding of research proposals in LDCs and to advise ADDR management in a variety of operational and technical issues.

ADDR is currently active in 7 countries: Indonesia, Kenya, Mexico, Nigeria, Pakistan, Peru, and Thailand. Twenty research projects have been funded totaling approximately one million dollars. The research grants program consist of small grants of up to \$25,000 and larger grants of up to \$100,000 per year. Two workshops have been conducted by ADDR - one in Thailand for proposal development, and another in Mexico on field methodologies.

Three broad priority themes were selected for ADDR supported research: (1) Home use of fluids and foods during diarrhea, (2) inflammatory and chronic diarrhea, and (3) changing behavior in regard to prevention or treatment of diarrhea.

As outlined in the original Cooperative Agreement, the mid-point evaluation focused on:

- Appropriateness of project design.
- Effectiveness of the project in achieving project outputs.
- Adequacy and quality of A.I.D. and Recipient resources, including budget.

- Adequacy of Recipient performance, management, and implementation.
- Recommendations for modification of project design, management, implementation, budget, and time period.
- Value of the project to international health, i.e., the role of the project in fulfilling A.I.D.'s health strategy.
- Lessons learned for use in the follow-on or subsequent activities and projects.

3. EVALUATION PROTOCOL:

3.1 EVALUATION TEAM MEMBERS

The Midpoint Evaluation occurred between March 14th and March 18, 1988. The Evaluation Team consists of four external reviewers and two A.I.D. representatives. They are as follows:

External Reviewers:

Abraham Horwitz, M.D., M.P.H. (Team Leader)
 Director Emeritus
 Pan American Health Organization,

Ronald J. Waldman, M.D., M.P.H.
 Director, Technical Support
 Division of Evaluation and Research
 International Health Program Office
 Centers for Disease Control,

Roger Glass, M.D., Ph.D., M.P.H.
 Respiratory Enteric Virus Branch,
 Division Viral Diseases,
 Center for Infectious Diseases
 Centers for Disease Control

Mark Nichter, Ph.D., M.P.H.
 Assistant Professor of Anthropology
 University of Arizona.

A.I.D. Representatives:

Jeffrey Harris, M.D.
 Former Cognizant Technical Officer,

Feng-Ying C. Lin, M.D., M.P.H.
 Cognizant Technical Officer

3.2 EVALUATION PROCEDURES

On March 14th, Dr. A. Horwitz, Dr. R.J. Waldman, and Dr. M. Nichter met in the A.I.D. office with Dr. Feng-Ying C. Lin, C.T.O.; Dr. Jeffrey Harris, former C.T.O.; Dr. James Heiby; Dr. Thomas R. Bender, Chief, Epidemiological Research Division, Office of Health; and Dr. Ann Van Dusen, Deputy Director of the Office of Health. Dr. Horwitz functioned as the Team Leader. Dr. Van Dusen presented the overall A.I.D.'s experience and expectations for mid-point project evaluation. Drs. Harris & Heiby presented historical aspects of ADDR project. Dr. Lin reviewed the scope of work and guidelines for the evaluation. One member of the evaluation team, Dr. Roger Glass, was not present on March 15th.

On March 15th, the Evaluation Team, including Dr. Lin and Dr. Harris, listened to presentations by various ADDR personnel in Cambridge, Mass. The presentation began with research themes and rationale for selecting them (foods and fluids, behavioral change, prolonged or invasive diarrhea), followed by details of the process of selection of sub-recipients.

Then there was a review of resources, progress, and problems on grants, selecting them from projects ongoing in Peru, Thailand, Indonesia, Pakistan, Kenya, Nigeria, and Mexico. The role of the Technical Advisory Group and results of past meetings were covered next. Social science/medical science collaboration included consultation mechanisms, workshops, and post-research seminars. Finally a variety of management issues comprised of staffing, resources and funding, ADDR/Field Mission relationships, ADDR/A.I.D. Washington relationships, prime/sub relationships, relationship to other projects, and field representative/ consultant issues.

ADDR personnel who made presentations were: Dr. Richard A. Cash, Principal Investigator; Jon Simon, Project Manager; Dr. Kenneth Brown, member of the TAG; Mary Jo Good, Anthropologist; and Courtney Nelson, Administrator.

On Wednesday, March 16th there were meetings of the Evaluation Team by themselves, and large group discussions with ADDR personnel of medical research issues, social science research issues, and management and strategy issues. On March 17th the Evaluation Team members discussed additional unfinished business and came to agreements concerning the various aspects of the ADDR project that were the subjects of evaluation components. Team members prepared draft recommendation which was presented and discussed with the ADDR at the Exit Conference on March 18th. The results were based on the several days of discussion amongst the team members and with ADDR personnel, plus ADDR's own evaluation of the project which was very well presented in their Mid-Project Report.

4. EVALUATION FINDINGS AND CONCLUSIONS

4.1 FINDINGS AND DISCUSSIONS:

4.1.1 Project Goals and Research Themes

4.1.1.1 A.I.D. Health Policy and the ADDR Project

Conceptually, the Applied Diarrheal Disease Research (ADDR) Project reflects the A.I.D. health policy and assistance program for child survival in poor communities of developing countries. Diarrheal disease is recognized as one of the leading -- if not the most important -- cause of death of children below five. Death can be averted through the effective and timely use of oral rehydration therapy (ORT) -- a remarkable outcome of research 20 years ago -- and feeding during and after the episodes of diarrhea. Although essential, these actions only prevent dehydration but not the disease. For the latter, a series of preventive measures are needed, including behavioral changes, improvement of the micro environment -- water, basic sanitation, food protection -- personal hygiene, health education, measles immunization, prevention of malnutrition and, perhaps, the administration of Vitamin A. Adequate birth spacing will certainly contribute to reduce morbidity and mortality due to diarrheal disease.

The ADDR Project also responds to A.I.D.'s research policy in health care, aiming at developing "new technologies for child survival, and to improve the delivery and effectiveness of existing technologies. Continued priority will be on improvements in diarrheal disease control and immunizations."

The fact remains that tested knowledge must be adapted to local conditions - taking into consideration particularly the behavior of people, reflecting their cultural background as well as of health providers, and the feasibility of appropriate technologies. On the other hand, new knowledge must be searched to better understand the determinants of the syndrome of diarrheal disease, and develop more effective methods to reduce it progressively, so that it becomes a minor public health problem in any country.

The role of the behavioral sciences has been recognized of equivalent significance to the biomedical sciences for interpreting the etiology, the pathogenesis, and the outcome of diarrheal disease. This conclusion has been reached rather recently on the basis of empirical observations. The need for research for the actual integration of the social and biomedical technologies in field studies has become apparent in order to determine the synergisms or antagonisms that they may have. The ADDR Project places strong emphasis in this type of investigations whose outcomes may become one of its most important contributions.

4.1.1.2 The ADDR Project Research Themes

The ADDR Project focuses on themes which would promote appropriate behavioral changes for preventing dehydration and controlling acute and

chronic diarrheal disease. Specifically, the following are the three broad priority themes: 1) Home use of fluids and foods during diarrhea; 2) Invasive and chronic diarrhea; 3) Changing behavior in regard to prevention and treatment of diarrhea.

The Evaluation Team recognizes the importance of these themes. They are certainly related to the most prevalent types of diarrhea regardless of etiology in developing countries, and deal with fundamental issues to avert death of children. Thus, they respond to A.I.D.'s health strategy. It is worth emphasizing the home use of fluids and food to prevent dehydration and malnutrition, whose combined deleterious effects usually lead to death. It is essential, however, to know what mothers think and how they act with reference to the administration of fluids and food to the child in each episode of diarrhea. This information can only come from well designed behavioral studies. It would not be surprising that what some mothers have been doing traditionally to treat their children with diarrhea may be as effective, and perhaps more cost-effective than ORT. Some studies point out that the withdrawal of all foods is not universally practiced; rather only a selective few may be withheld. On the other hand, the behavior of health providers, both professionals and non-professionals, may be of great importance in ensuring the success of DDC programs.

In any case, the significance of the ADDR Project for health and nutrition education programs, tailor-made to local conditions, can be foreseen.

Up to March of this year, ADDR grants have been distributed among the three research themes as follows:

Invasive and chronic diarrhea	3
Foods and fluids	5
Behavioral changes	12

When new proposals presently being examined are approved, perhaps a better balance will be reached, particularly among the last two categories.

Although in agreement with the selected themes, the Evaluation Team suggests they include, perhaps as a new category, studies on prevention of diarrheal disease. Water supplies, disposal of excreta and solid waste disposal, hand washing and personal hygiene, food handling and protection, measles immunization, Vitamin A administration, the role of supplementary feeding and other aspects of convalescent care, are some of the subjects to be considered. The results of these studies could contribute to strengthening ongoing policies in some countries, or to formulate them in others, because of their significance to the health and well-being of the people. Research in these areas will certainly require the integration of the behavioral and biomedical science in carefully designed projects.

The Evaluation Team also recommends that a common definition of chronic diarrhea be agreed upon by a group of TAG members and other experts that could be used for epidemiologic and comparative studies in developing countries and among them, in order to determine its prevalence, indicators of risks, and incidence and mortality rates. Available data at present do not provide a clear picture of the actual significance of this condition. Nor has research identified effective treatments and measures for controlling it, because there

is no consensus about its etiology, pathogenesis and distribution in each country.

4.1.1.3 The Value of ADDR Project for Developing Countries

Operationally, it is premature to determine the value of the ADDR Project for diarrheal disease control in developing countries. Only two studies have been completed. Whether or not every investigation leads to policy decisions and will be useful for program formulation and implementation, must be established. In principle, taking into account their objectives, this should happen. However, much will depend on the size of the sample, the significance of the outputs and outcomes, the magnitude of diarrheal disease in each country, the type of technologies used, whether they can be transferred, and other factors. The ADDR Project should develop comparative analyses per theme, or sub-theme, in the seven countries where studies are being pursued. Once outcomes have been obtained, perhaps with larger samples related to any basic issue in diarrheal disease, it may be possible to show that conclusions drawn from this research has policy implications. To this end, the Evaluation Team agrees with the efforts of the investigators to consult with the local decision-makers from the inception of each study, so that they become aware of the objectives and the potential impact of them. In Kenya and Nigeria, committees of national officials and representatives of international agencies identified research priorities in diarrheal disease control. These approaches and others will ensure that the studies can be of consequence beyond their immediate results. It should be kept in mind that even in the event that no new policies or technologies are identified, still the Project as designed could contribute significantly to human resources development in diarrheal disease research and institutional building. Beyond the benefits to the people that these studies will bring, they will contribute to create or strengthen scientific cooperation between the USA and different nations, a worthy goal.

The Evaluation Team fully supports the strategy which has evolved during the ADDR Project, and stated in the Mid-Project Report. "The principal element of the strategy is a focus on the process of designing, conducting useful research, and communicating the results to national policy-makers and program managers. The institution-building mandate in the Project is interpreted to include the national context in which research results are to be applied. It is not enough to strengthen an institution within its walls, without regard to the ways in which it contributes to the larger society" (page 2).

Some of the potential consequences are as follows:

Anticipated value of the ADDR project to LDCs:

- a) It will improve the research capacity in diarrheal disease prevention and control of the investigators and the institutions they are associated with;
- b) It will contribute to developing integrated research models of the biologic, clinical, epidemiologic, and social sciences relevant to diarrheal diseases;

- 5) The outcomes of the studies effectively disseminated should make better the teaching-learning process of the syndrome of diarrheal disease at the graduate and undergraduate levels;
- d) If properly presented to decision-makers and program-managers, the results could become the basis for changing or formulating policies and strategies leading to the use of more effective technologies;
- e) Given the need for changing behaviors in order to reduce morbidity and mortality rates due to diarrheal disease, the studies will show the importance of nutrition education programs with a solid component of social science.

4.1.1.4 The Appropriateness of the Project Design

The Evaluation Team is convinced that the overall goal of the ADDR Project is sound, and that it should not be changed during the remaining years of the Cooperative Agreement. It responds to an urgent need related to a problem with high incidence and mortality rates, particularly among the poor communities of the developing world.

Notwithstanding, experience has shown clear imbalances between some of the specific objectives of the Project, the time ascribed to fulfill them, the resources available, as well as the need for implementing studies in three different regions of the world. These weaknesses are more evident in the areas of personnel and logistics. In this regard, the Cooperative Agreement refers to 40 projects, 15 of which should be large, to be developed in 20 countries. As concrete objectives, they certainly were too ambitious, "more grandiose than doable" we were told. The need most likely exists in all those countries and many more, and research capabilities may be clearly lacking. But the nature and goal of the Project is such that it does not lend itself to a mass approach. The process of bringing about applied research in developing societies through the creation of a cadre of scientists with solid knowledge, methodological skills, and a national purpose working in stable institutions, is complex per se. Its speed will mainly depend on the quality of the human resources.

On the other hand, the consortium of Universities to respond to the objectives of ADDR, including the TAG, has very good -- if not the best -- experts in diarrheal disease in the USA. Still, to link them in a timely and effective manner to specific countries and studies, requires involved managerial procedures. Consultants are very useful but they are to be briefed and debriefed; their reports should be reviewed for consistency, sometimes edited, and distributed appropriately. With reference to this activity, as to many others, the core staff of ADDR is essential and the need to strengthen it has become apparent.

Let us keep in mind that the decision was taken not to transfer technology from abroad, but to cooperate in the development of applied research -- or look for new approaches -- at home, by national investigators associated with scientific institutions. The hope was, and still is, that policy-makers will ask local researchers to identify problems of importance for diarrheal disease prevention and control. Thus, they will be informed from the beginning about the nature of each study, and the potential policy implications of the outcomes.

Because of lack of clarity of the Project Paper there were different conceptual interpretations about the real meaning and the most effective ways to develop the goal. This, to some extent, may explain that the time and the processes needed to promote and start studies in different countries was underestimated. The Project had a longer incubation period than expected. It seems that, at present, a tested system to promote and refine requests to ADDR is in place, as witnessed by the increasing number of studies under consideration. As discussed elsewhere in this report, a series of workshops have been very useful to improve proposals from national investigators of the countries selected, and 22 of them have been finally approved and financed.

Although the total number of studies carried out in the life of the Project may even surpass the 40 limit in the Cooperative Agreement, the countries have been reduced to seven and, in each one, several institutions have been involved. This seems to be a rational decision. Until now, these have a standing, i.e. a certain tradition in the local research community.

With these different conceptual and managerial constraints inherent to the Project, it is not surprising that the cooperation among the three Universities in the Consortium was not as smooth as expected during the first year of operations of the Cooperative Agreement. At present, the situation has improved markedly, particularly between Harvard and Hopkins. The role of Tufts needs to be specified, after the decision of the USAID Mission in Zaire not to implement studies on diarrheal disease carefully designed during a year, with the technical cooperation of advisers of that University.

The logistics included in the proposal by HIID for the ADDR Project was based, in a major way, on a very active interchange of information -- throughout the development of each study -- between scientists in the USA and among them, and the principal investigators in the emphasis countries. It intended to use advanced computer technology in telecommunications. As the Evaluation Team was informed, "neither the electronic networking of ADDR with AID and members of the TAG nor the electronic hookup with field research institutions has developed to the extent anticipated. The system has failed to reach a usable level." We feel that, perhaps, it was beyond the real capabilities in modern communication of developing countries. Still, the purpose was sound because it is essential to have a close follow-up with attendant technical assistance, particularly during the formulation phase of each investigation, and the beginning of its implementation, as well as in later stages, upon request of the researchers.

4.1.2 The Quality and Areas of Research of the Funded Projects

4.1.2.1 Research Proposals in General:

Twenty-two proposal approved or pending approval were reviewed. Only three interim reports were available from Peru (2) and Pakistan (1). General comments on the proposals seem in order.

The areas of study specified by the proposals submitted meet the mandate of the project. As a whole, the proposals represent a wide range of research topics which address issues which could well have relevance for diarrheal disease programs in the countries.

Many of the smaller field projects appear to be very broad in scope posing operational problems. In some instances broadness of scope is a feature of an exploratory descriptive study, in others it represents inexperience by the junior investigators in focusing their ideas and inadequate mentoring by an experienced consultant. This must be done carefully with appropriate backup for local investigators to minimize the frustration which may diminish rather than foster their future interest in problem solving applied research.

In general, those proposals with a specifically designated consultant/mentor were better prepared, and more limited in their objectives, making them more likely to be completed successfully. The designation of a consultant/mentor may provide for easier interaction between ADDR and the field investigator. It should also facilitate monitoring, and ensure the quality of results, through appropriate analysis.

One emphasis of the project has been the development of an interdisciplinary collaborative approach to diarrheal disease control using a combination of social, medical, and epidemiologic input. In proposals where this is reflected, the integration of epidemiology and social science has not always been adequate or appears lopsided. For example, in a well planned anthropological study of diarrheal knowledge and behavior in Thailand, the investigators could have better defined the diarrhea and study sample should epidemiological or medical input had been sought for. On the other hand, a treatment evaluation/intervention study which incorporated both elements in principle could have benefited from consultants of both epidemiological & anthropological disciplines.

It was apparent that some very promising young researchers identified by ADDR staff have submitted serious first proposals for research. For these investigators, some of whom have received recognized training supported by other international agencies, ADDR has provided a good source of funds to promote their early research efforts. Identification and recruitment of similar individuals should be encouraged.

Management of this project is difficult since many small projects are anticipated in the future. By fostering linkages between investigators in a country or in an institution, interaction between local researchers will increase as will contact with consultants. For example, in Thailand we applaud ADDR's efforts to utilize Mahidol University as a hub resource center supporting other in-country projects.

4.1.2.2 Comments on Specific Proposals:

The team feels it is appropriate to briefly comment on the three largest proposals submitted to ADDR.

a. Behavioral Investigation of Persistent Diarrhea in Northeastern Brazil.

This project proposal is well prepared and clearly addresses, through a collaborative approach, a diarrheal disease problem of great national importance. Its design reflects and builds upon existing local data bases.

b. Maternal Education, Maternal Behaviors, and Risk Factors for Diarrheal Disease for children in Urban Nigeria.

This study examines the relationship between maternal education, maternal behaviors and risk factors for diarrheal diseases in Nigerian children. The project is thoughtfully conceived, creatively constructed and well presented. It has clearly benefited the strong input of a visible consultant from Johns Hopkins. Results from this study could well enhance present understanding of the relationship between maternal education and diarrheal disease and could lead to applications for improved diarrheal disease control program in the country.

Nigeria has recently constituted a committee to review diarrheal disease proposals in the country. This proposal might benefit from an in country review by this board which would serve to inform local officials of this important proposed activity.

c. The Development and Field Testing of a Soup-Based ORS in Lima Peru.

This project proposes a series of phased objective to examine current home used fluid & food in oral therapy, to test them under case-control clinical conditions, and to follow through with an early treatment trial in the field. The investigators have submitted interim progress reports that demonstrate successful completion of the early phases of the work. The investigation is clearly in the national interest of the country and may help to shape the oral therapy program on a national basis.

4.1.2.3 Workshops:

Two workshops have been conducted by ADDR in Mexico and Thailand over the past year as a means of stimulating interest in diarrheal disease research, enhancing the methodology skills of local researchers, and serving as clinics for proposal development. The evaluation team deems proposal development, skill enhancement and data management/analysis workshops valuable ADDR activities consistent with project objectives. ADDR has made efforts to tailor regional (country specific) workshops to the varying research needs and the levels of sophistication of participating researchers. The team views positively ADDR's efforts during these workshops to review regional data sets on diarrheal diseases, involve experienced local researchers as role models, and use a mix of English and local vernacular for instruction. Also viewed as positive are efforts to engage participants in case based methodology exercises and provision for hands-on microcomputer instruction to facilitate proposal revision.

In conjunction with the workshops the team encourages development of workshop manuals, research issue lists, and exemplary case study protocols -- in addition to the distribution of key articles and research reviews to participants.

4.1.2.4 Special Studies:

ADDR plans to contract experienced researchers to write summary state-of-the-art papers on issues of importance for diarrheal disease research. Only one such report was completed and available for review by the team. This

paper reviewed anthropological literature on diarrheal disease was academically sound but uncritical, and it focuses little on methodology. Future papers should concentrate on the identification of issues (e.g. provide inventories of issues) and methodologies.

They might address the collection of observational data on behaviors as risk factors for diarrheal disease, and interview protocols focusing on health practices, concepts, concerns and decisions making processes.

A post-project measure of ADDR success will be the advancement of existing knowledge about and methods for diarrheal disease research. At the completion of the project a comparison may be made between research predating ADDR and the data and methods generated by and tested during ADDR research activities.

4.1.3 Resources, Management, and Operations of Research Grant Program

ADDR is one of several projects financed by A.I.D. and by other donors with similar goals. These projects, such as WHO/CDD, PRITECH, PRICOR, and CCCD, all seek to fund and assist with the implementation of "operational research" in developing countries. Because of the relatively limited number of researchers and institutions who are currently capable of carrying out such research, it is difficult for these projects to cooperate with one another. More commonly, a certain level of tension and reserve exists. ADDR has been relatively successful in dealing with this situation -- its TAG consists of experts from several of the agencies involved with similar projects and its attempts to inform and coordinate diarrheal disease research activities are laudable. However, because it is inevitable that some degree of "turf struggle" exist, it is suggested that A.I.D. review its current policy of funding several projects with the same general objectives -- collaboration between institutions would be easier if their work were complementary rather than competitive.

Identifying institutions and researchers was a problem. For the most part, the Recipient and its sub-contractors have relied upon previously existing institutional and personal affiliations of their own or of their TAG members. While there is nothing wrong with this, few new associations have been developed. Nevertheless, with the decision to concentrate efforts in a few emphasis countries, and to work with several institutions within those countries because of the lack of a "critical mass" of researchers at any single institution, the Evaluation Team acknowledge that both the identification of researchers and the proposal solicitation process has improved and that the number of acceptable proposals received from diverse institutions is increasing.

One area where ADDR has achieved considerable success is that of protocol review and development. In general, investigators from the United States have worked with developing country researchers to develop protocols to the point where they can be submitted for consideration for funding, and the TAG has been rigorous in approving only those submissions which meet the highest standards of scientific quality. In fact, one might suggest that the TAG consider relaxing its standards somewhat in order to allow more projects by junior investigators to be funded. If ADDR is to be considered, in part, as a

teaching project, it should be expected that some protocols will not be of the highest quality -- the work of junior investigators tends to be less exemplary than that of their teachers. In addition, the current system, as observed by a member of the Evaluation Team at the April 1987 TAG meeting, favors those protocols which have been developed with the assistance of a TAG member -- a recommendation to this effect is included.

Financial support by A.I.D. has been generous, as has the funding of approved projects, to the best of the evaluation team's knowledge. Overall spending by ADDR had, however, been well below budgeted amounts, and this may cause serious problems for the project in the years to come. At the start of projects of this sort, spending is minimal, with no research projects yet developed, and no expenses associated with analysis and publication of research findings. To some extent, then, A.I.D.'s policy of flat-line funding through the life of project is inappropriate for ADDR. On the other hand, the ADDR has obligated much less money for research projects than it had planned, because of the need to ensure that the research projects actually come from indigenous investigators and that the proposals are sound. The Evaluation team recommends that in the remaining years of the life of the project, A.I.D. finances should be sufficient to cover the funding of proposals approved by the TAG. Furthermore, the project should be extended in order to invest the total amount of intended funding.

In the area of management and coordination, A.I.D. has not been as effective as it should be. The writer of the RFA had a direct affiliation with one of the sub-contractors. Since that time, until the time of this mid-point evaluation, there have been two project managers. Perhaps the most serious problem has been that the portfolio of the project manager most closely associated with ADDR was too charged to allow him to pay adequate attention to the needs of the Recipient and sub-contractors. Still, A.I.D. has been instrumental in helping the Recipient and the sub-contractors overcome certain difficulties and in providing general guidance to a dedicated and well-intentioned ADDR managerial staff. Existing problems seem to have been corrected at this point, and the Recipient should be able to count on a closer and more inter-active relationship with A.I.D., a situation which will be of great benefit to both parties.

The staffing pattern of ADDR was reviewed. The core staff consists of a principal investigator (50% of time), an anthropologist (33% of time), a manager (full time), an administrator (phasing out in few months), and two full time administrative assistants. Since the Principal Investigator can only contribute 50% of time, the Team feels that a project of this magnitude would need more staff for the technical support and monitoring of the project, especially in the area of field epidemiology of diarrheal disease.

The TAG has been a valuable resource to ADDR in two ways. First, it brings together experts in the field of diarrheal disease research to assist in identifying priority areas for further investigation and it encourages continuing relationships with developing country institutions with which TAG members have established on-going relationships (the unfortunate Brazil experience notwithstanding). Secondly, the innovative composition of the TAG, with representation of both biomedical and social scientists, has by all reports a stimulating and challenging environment in which discussions regarding diarrheal disease research occur. The composition of the TAG should not be significantly altered, but the evaluation team does not feel that it is

appropriate for representatives of the Recipient of sub-contracting institutions to be represented on a committee which makes funding decision. A recommendation is made to this effect.

In general, recommendations of the TAG have been implemented in a timely manner. For the most part, these recommendations, to the evaluation team's knowledge, have consisted of modifications to be made to individual protocols submitted to it for funding consideration. It is not clear whether or not the TAG as a body has been active in providing procedural and managerial guidance to ADDR, although this has probably been the case through correspondence and dialogue with individual TAG members.

A final area of concern regarding the management of ADDR has been the use of Subrecipients by the Recipient. It became clear to the evaluation team that problems existed between the Recipient and The Johns Hopkins University during the early stages of the project. Most of these problems, which will not be discussed in detail in this report, have by now been resolved and a close and constructive collaboration is anticipated for the future. The role of the other Subrecipient, Tufts University, remains less clear. The contribution of Tufts to ADDR to date is difficult to define and, with the non-implementation of the proposed project in Zaire, there does not seem to be any clearly defined role for this Subrecipient in the near future. In other words, the contribution which Tufts will make to ADDR needs to be more carefully defined and the nature of its agreement with the Recipient should also be reviewed.

In general, the Management and Operations aspect of ADDR was found to be generally unsatisfactory during the early stages of the project. All parties, Recipient, Sub-recipients, and A.I.D. were responsible to varying extents. Over the course of the last six to twelve months, however, many of the problems appear to have been resolved or means of bringing about resolution have been found. The Evaluation Team does not find this particularly surprising for an innovative and complicated undertaking such as ADDR and feels that the potential for success over the course of the rest of the life of the project is real and substantial. It is recommending, accordingly, that ADDR be extended to allow for a full project life time of smooth operations, and that funds be provided to allow proposal development workshops, research projects and analysis workshops to take place as discussed during the evaluation.

Previous experience with other projects in the health sector has shown that the identification of researchers, the development of research protocols, the implementation of funded research projects (including monitoring of progress by the funding agency), and the dissemination of results in scientific form are complicated and difficult steps, but that all must be accomplished before a product can be delivered. Although ADDR has not yet been successful in assisting a developing country research to the end of a project, it should be recognized that the time necessary to go from project solicitation to publication of results is frequently underestimated and that more than one attempt is sometimes necessary before a project finds the most efficient way to do so. The Evaluation Team feels that ADDR, at the time of this mid-point evaluation, has explored several potential mechanisms for accomplishing its goals with less than optimal results, but that the potential for success during the second half of the project is real and substantial.

4.1.4 Communication, Documentation and Dissemination of Information

As agreed upon in the Cooperative Agreement, the Recipient shall submit the following reports:

1. Monthly: Status checklist, Program budget, Technical and Geographic Activity Summary Report.
2. Quarterly: Quarterly progress report.
3. Annually: Annual work plan.
4. Mid-Project report.
5. Final report.
6. Project technical reports: Report for each completed activity, conference reports, special study reports.

On May 13, 1987, the Cooperative Agreement was amended to require quarterly technical and geographic report and to delete monthly status checklist, monthly technical and geographic report and quarterly progress report.

These reports have been submitted regularly --

The annual work plans were submitted each year and are well prepared. The Mid-Project report completed in March, 1988 gave an historical overview of the project, outlined all difficulties of the project's implementation at the initial stage, honestly and frankly discussed lessons learned, and detailed current and anticipated problems in the project. The openness of the Recipient provides the foundation for the smooth relationship between A.I.D. and ADDR.

As to technical reports, such as trip reports by consultants or ADDR core staff, we found that consultants have written trip reports consistently, but the core staff have not. These reports are important not only for documentation but also for dissemination of information on activities being carried out. No conferences or special studies have been conducted and therefore no report has been received.

Other documentations, such as research pre-proposals and proposals were not submitted to A.I.D. in total. It was explained to us that because the former CTO was too tied up with other responsibilities and had no time for reviewing proposals, ADDR became discouraged about sending these documents to A.I.D.

In spite of constraints of CTO's availability, communication between ADDR and A.I.D. has been kept open and regular discussions on management or technical issues have been maintained either by telephone conversations or meetings at the A.I.D. office. However, it has developed into a pattern that A.I.D. office functions not much more than an end-stop for travel authorizations, signatures for proposal funding and voucher payments etc. The original intent of "Cooperative Agreement" seems to have been lost.

The Missions in the seven emphasis countries were asked to give input to this mid-project evaluation. Comments were received from Missions in Bangkok,

Peru, Senegal and Mexico. It appears that Missions are well informed of ADDR activities in the countries. They value the ongoing research projects highly and are satisfied with the progress so far. Though research data has not come to the maturation stage, the Missions emphasize the importance of information sharing with and dissemination to all researchers, agencies, institutions involved and most importantly the Ministry of Health in the country.

4.2 CONCLUSION AND LESSONS LEARNED:

The Evaluation Team concluded that the ADDR Project responds the A.I.D.'s research policy in health. It is felt that the goal of the Project is sound. Due to the difficulties of identifying indigenous researchers and other constraints, the project has had a very slow start-up phase. It, however, has a number of investigators and institutions involved. Integrating effectively social, epidemiological and bio-medical sciences in applied diarrheal disease research will be a fundamental contribution for the prevention and control of the condition.

This period has also been valuable for the identification of constraints for a more productive use of human and material resources during the remaining years of the Project. The Evaluation Team has made suggestions to overcome them and is grateful to the core staff for the openness in their in discussion.

The fact remains that the Project Paper was too ambitious. It required a large number of investigations to be developed, of countries to be involved, and of diverse objectives to be accomplished by a consortium of U.S. universities. It did not take into account the time needed for the organization of the Project at the central level, the promotional phase, the identification of researchers and their institutions, the selection of the most adequate consultant-advisor, the creation of the TAG, the implementation of an effective communication system and, last but not least, the decision about the most suitable model to improve diarrheal disease control through applied research at the local level -- not technology transfer from abroad -- and institution building.

As witnessed by the increasing number of proposals coming from the emphasis countries, it is pleasant to note that the ADDR Project is well under way, based on a sound conceptual framework and a significant goal for developing countries.

Several questions seem to have prevailed since the inception of the ADDR Project. How is research in developing countries promoted, designed, implemented and sustained? Is it possible to create a network of investigators that will eventually become self-sufficient to do good quality research on DDC, of significance for people? Can this local capacity be developed, while building up the institutions the investigators are associated with? Is it feasible to establish a smooth effective partnership between USA consultants-advisors and local researchers throughout the life of each approved study? What is the most effective model for managing a Project with diversified investigations in seven countries and a consortium of USA universities? Are there tested models for integrating the bio-medical, epidemiological and social sciences in specific studies? How best to create and/or complement the essential data management and analysis capacity for the

completion of each study, the effective presentation of data to decision-makers and the publication in peer-reviewed journals? How to identify policy implications early in the designing of a research project, convince the decision-makers to contribute to this process, keep them informed about outputs, and suggest to them policy and operational changes to better control diarrheal diseases?

Answers to these and other questions are starting to come out as a result of the different conceptual and operational models being developed by ADDR. On the basis of the limited experience to date, the Project seems feasible and its basic goal and specific objectives should be accomplished to a large extent. Some questions will remain because of the short life of ADDR, the complexity of the issues, and the lack of consistent experience related to them, e.g., the policy implications of certain studies. In any event, mini-breakthroughs will be obtained in each of the emphasis countries, the more significant the larger the number of investigations and institutions involved. Integrating effectively social, epidemiological and biomedical science in applied diarrheal disease research will be a fundamental contribution for the prevention and control of the condition.

ADDR was originally organized as a world-wide research competition. The result of identifying institutions and researcher in the initial phase was scattered. And the amount and the quality of proposals submitted were far from optimal. In relation to these results, the traveling and time consumed by research scientists from the participating universities does not seem cost effective. ADDR learned the lesson that the international competition designed to attract proposals did not best suit the Project's need.

ADDR has a world-wide mandate. It has to demonstrate that ADDR activities contribute to A.I.D. Mission's objective in the country in order to gain Mission's approval and support for the project implementation. Experience in Zaire with the Mission who reversed its original decision of agreeing for the project activities, has caused the Project to waste much effort and time. In Brazil, the solicitation of proposal and researchers proceeded with the certainty of approval for a waiver request. After a great deal of effort and time had been invested, the waiver for working in Brazil was denied. These painful experiences demonstrate that firm commitment must be sought before launching any program in a country.

Lastly, in the area of management and operation, it must be realized that a project ambitious as this requires tremendous effort to develop it. Because the Principal Investigator cannot devote more than fifty percent of time for the project, the Team has agreed to strengthen core staff in order to ensure the total number of proposals approved will be successfully implemented. It is also expected the CTO to be fully engaged in the management of the project for A.I.D. It is of utmost importance that both the Principal Investigator and the CTO fully engage themselves into the project in order to get the best output.

5. RECOMMENDATIONS:

1. During the course of the past few years, A.I.D. has developed and funded a number of projects aimed at reducing morbidity and mortality due to diarrheal disease. Within the Office of Health, the PRITECH, PRICOR, and ADDR

projects all have substantial research responsibilities and all tend to concentrate on developing projects from a relatively small number of individuals and institutions. In addition, the CCCD project financed by the Africa Bureau also has a large applied research component.

The Evaluation Team feels that A.I.D. would be wise to review these projects in an attempt to coordinate their efforts. A review would allow A.I.D. to consider the failures and the accomplishments of these projects in the area of applied research. It might allow for the development of a coherent and organized research policy and for better coordination between the projects. Ultimately, a review of this sort would benefit the countries, the institutions, and the individual researchers who are the intended beneficiaries of these projects.

2. The Evaluation Team was concerned by an apparent lack of clear objectives against which to measure the success or failure of ADDR. It feels that the project will be successful if it is able to generate interest in and research capacity for the study of diarrheal diseases; provide an opportunity for junior researchers to carry out small scale exploratory research leading to more focused context responsive diarrheal control efforts; and bring to completion a group of research project conducted by local investigators in a restricted number of countries.

The project should be aimed at resolving important obstacles and in identifying opportunities for implementation of diarrheal disease control programs at the local or national level. Through the support of local researchers and the ties they build with consultants/subcontractors, there is considerable potential for developing a few key research institutes in developing countries to the point where they will be capable of conducting independent research on diarrheal diseases and participating in the development of national policy.

3. The Evaluation Team feels that the research themes designated by the project are important and could be expanded to include aspects of prevention, e.g., handwashing, measles vaccination, disposal of fecal material, (etc.), the role of feeding and other aspects of convalescent care.

4. The Evaluation Team feels strongly that local investigators should be supported by close association with an established investigator(s) and by careful monitoring by project staff. All projects financed by ADDR should have a demarcated senior investigator, a medical or social scientist, attached and committed to the project as a mentor and consultant. Providing junior investigators appropriate guidance in conducting careful research is a difficult task. At the discretion of the mentor and ADDR, additional consultant services from relevant co-specialties may be made available to local researchers carrying out projects which cross disciplinary lines e.g. both an anthropologist and clinical epidemiologist may provide consultant services to the project.

The mentor of each project should be charged with helping get the project proposal in suitable form for presentation to the TAG; arranging for and scheduling follow-up consultant visits with the principal investigator; and keeping in close contact with the ADDR project manager. This will ensure that proper guidance and support are provided for the successful completion of field studies. (ADDR funds, should directly be routed to host country

institutions.) ADDR should exercise sensitivity in selecting and briefing mentors such that it is clear that they are assisting local researchers develop their own proposals and the skills necessary to complete local research objectives. Care should be taken so that ADDR sponsored research projects are not viewed as extensions of the research activities of American investigators in developing countries. It should be clear that local researchers are playing a lead rather than a supporting role.

5. The project should continue to focus on the seven emphasis countries in which it is currently operating.

Within these countries, research as much as possible should be focused at those institutions most likely to develop independent, self-sustaining research capabilities which can be supported through collaborations or consultants. This will facilitate development of a critical mass of investigators in the country, better monitoring of research progress and maximizing consultation resources. Ties between a lead institution(s) and other national investigators conducting ADDR supported research should be encouraged.

6. The Technical Advisory Group to ADDR has been an important element in this project. In addition to project directives it has fostered greater understanding between biomedical and social scientists members of the TAG providing a forum on inter-disciplinary research in diarrheal disease. Its composition is currently imbalanced for the mandate and the range of field projects submitted. The Evaluation Team recommends the addition of a field epidemiologist which is currently lacking in the TAG. Second, as a principle and in order to avoid any potential appearance of self interest, the team recommends that no members of the TAG should be drawn from the institutions of the primary or subcontracting groups. It is recommended that the TAG include five-seven voting members to expedite actions on proposals. Representatives should include researchers from the social sciences (two), medical epidemiology (one), diarrheal disease specialists (two). If members representing these specialties cannot attend, alternates from their specialties should be designated. The team recognizes the valuable contribution of present TAG members who are affiliated with sub-contractor institutions. It is hoped that these key individuals will remain on the TAG as resource experts. All sub-contractors should have at least one observer present at all TAG meetings. These observers should be allowed to actively participate in discussions.

7. All projects considered by the TAG for funding should be represented at TAG meetings by the consultant mentor, a designated project advocate, or subcontractor staff responsible for backstopping projects in that country. It is the responsibility of ADDR to assure that all protocols submitted for approval to the TAG are presented by an advocate who will include a proposed schedule of adequate monitoring and appropriately timed technical assistance. Project central staff and the A.I.D. CTO need to monitor the project to ensure the adequate supports are provided for the investigator. Upon acceptance for funding, ADDR staff, the project consultant, and the senior investigator need to agree on a timely schedule to report changes in project design and results from the field work in various stages of analysis.

8. The Recipient has recognized that its current staffing pattern is inadequate and has proposed that it be modified. The Evaluation Team agrees

that an epidemiologist preferable with field experience in diarrheal diseases should be added to the staff and that the time contributed by the social scientist needs to be increased. It is recommended that the project attempt to hire specialists in these fields on a full-time basis. If the services of one senior social scientist with required skills and background cannot be found, it might be feasible to contract the services of two junior-middle level social scientists, on a part-time basis, and to divide their responsibilities geographically. New staff should be acceptable to all subrecipients and A.I.D.

9. To date the majority of ADDR activities have been appropriately directed toward stimulating proposal development and the early stages of data collection. Project development workshops are a good idea and, although they were not initiated until relatively late in the first half of the project, they should be continued if funds are available to support new research. Workshops may benefit from and contribute to state-of-the-art issue and methodology review papers written in a clear and concise manner with case examples.

10. It is appropriate at this stage for ADDR staff to turn attention towards enhancing the skills of local researchers in data management, analysis, and the dissemination of research results. ADDR has proposed "REAP", a 2-month course which would be held in the U.S. during the summer of 1989 and 1990 for a group of researchers whose work has neared completion. The Evaluation Team feels that it would be more useful to schedule a series of shorter national or regional project completion workshops oriented to the broad needs of all project investigators while at the same time providing individual attention to those whose work might be at different stages of development.

11. Some of the problems which the team identified with the project to date are due to A.I.D.'s inability to provide a fully engaged, long-term cognizant technical officer. The team feels that the role of the CTO is a crucial one. The individual holding this position needs to be readily available and able to interact actively with the contractor. In other words, the CTO should be an important resource to the project, not a person who fulfills minimal obligations. The scope of work of the CTO is detailed in the cooperative agreement between A.I.D. and the contractor -- both parties should strive to see that the terms of this agreement, are strictly followed or appropriately modified. We suggest that the CTO should attend all TAG meetings and visit field sites on a bi-yearly rotation.

12. The relationship between the primary contractor and the sub-contractors has been a source of concern to date. In large part due to the efforts of the project managers, differences between HIID and The Johns Hopkins University seem to be largely resolved. The role of Tufts University, however, remains unclear at present. A careful review should be undertaken. The team was unable to discuss the situation with representatives of Tufts, but has the impression that it might be necessary to re-work the nature of the agreement between HIID and this sub-contractor.

13. Without addressing the specifics of the budget, the Evaluation Team feels that A.I.D. support to ADDR should continue. It remarks that a research development project such as this, should not be expected to spend at a constant rate. A long start-up period is to be anticipated. Whereas it is

clear that ADDR has significantly underspent its budget funds to date, the team feels that significant progress in eliciting new projects has been made and that new proposals will be forthcoming. It also feels ADDR should encourage investigators of projects (especially exploratory studies) that have been successfully completed to return to ADDR for funds to carry out further research. Proposals which would have direct application to national policy should receive the highest priority.

In order to assure that ADDR is able to produce the quantity and the quality of the product for which A.I.D. contracted, it will be necessary to allow the project to continue to elicit and fund new proposals through proposal development workshops. The team also feels that enough funding should be made available for the development of regional proposal completion workshops.

In short, adequate funding over the next few years should be provided to support the new and ongoing projects.

The Evaluation Team feels that the ADDR project has an important role to play in developing the applied research capability of those countries in which it is involved. If implemented it will enhance the research capacity of individuals and by so doing strengthen their home institutions' commitment to high-quality research as a means toward public health problem solving. For a variety of reasons, including unrealistic recruitment procedures and expectations, a lack of clear objectives, problems between the recipients, inadequate participation by A.I.D. staff, and the lack of experience of either A.I.D. or the contractors in implementing a project of this sort in the health sphere, the project was slow in finding its way. During the course of this evaluation, the team was convinced that most of the problems identified have been recognized and resolved. The potential benefits and important lessons arising from this project prompt the team to recommend that A.I.D. support the project in such a way that it may be brought to completion.

APPENDIX

- I. Agenda for Pre-Site Visit Briefing**
- II. Scope of Work**
- III. Agenda for Midterm Evaluation**