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**RESEARCH ON AGING IN DEVELOPING COUNTRIES:
A Second Report to the USAID Research Advisory Committee (RAC)**

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1. Introduction

This report provides the findings of a review panel on aging in developing countries. It is the second such panel to examine the current research strategy on aging of the U.S. Agency for International Development (A.I.D.) and to make recommendations on the substance of a future A.I.D. portfolio on aging in developing countries. This report was developed by a Panel of the Board on Science and Technology for International Development (BOSTID), National Research Council (NRC). It was prepared after a one-day discussion held in Washington D.C., on June 15, 1990, at the request of the Research Advisory Committee (RAC) of the Agency for International Development (A.I.D.) under terms of a contract for advisory inputs into deliberations of the RAC.

The topic of aging in developing countries raises a variety of issues that cannot be fully explored in the framework of a one-day discussion session. The Panel, the NRC, and A.I.D. recognize the inherent limits of this format. With this in mind, the aim of the meeting was to convene a small group of experts in the fields of public health, demography, economics, sociology, and administration to review the current A.I.D. portfolio on aging and to suggest future opportunities for involvement of A.I.D. and other interested agencies. The report does not seek to give a comprehensive overview of the major issues of aging in developing countries, nor does it seek to be an authoritative statement. Rather, it aims to consider the questions raised by A.I.D. in its request for review and to extend and heighten awareness of aging as a social, medical and economic issue in development planning.

For the purpose of this review, the Panel examined issues of aging in developing countries primarily in the health sector. The Panel recognized that the topic of aging encompasses a much broader range of concerns, from social security, education, and welfare systems through informal social support structures to macroeconomic issues of national income, labor and workforce shifts, and total employment. Regardless of broader concerns with the consequences of aging populations, health is an area in which impact is likely to be severe both at the macro and micro levels of economic development. In addition, the Agency has traditionally had a strong role in health sector programs. For these reasons, the Panel felt the health sector to be a priority issue for A.I.D. In the future, however, A.I.D. should consider allocating significant attention and resources to areas other than the health sector not explicitly discussed in this brief report.

This review is the second occasion on which an NRC Committee has been asked by A.I.D. to examine issues of aging populations in developing countries. The first occurred in December 1987 and resulted in an unpublished NRC document to the Agency entitled,

"Issues of Aging in Developing Countries: Comments for the A.I.D. Research Advisory Committee". That document, publications of the Bureau of the Census, supported by the A.I.D. program, and a series of A.I.D. reports to Congress formed the background materials for the Panel's discussions; Annex A lists these documents. Annex B lists the NRC Panel members and resource persons from A.I.D., the Bureau of the Census, and from the NRC staff who participated in this June 1990 meeting.

A.I.D., in response to recommendations by the 1988 NRC Panel to the RAC, adopted and began to implement a medium-term (2-3 years) research strategy on aging. As the strategy is entering its completion phase, A.I.D. asked the NRC panel to consider the following questions:

- 1) What priority should A.I.D. give to the topic of aging of human populations in developing countries in its research program? Is research the most appropriate contribution A.I.D. can make on this subject?
- 2) Assuming that A.I.D. will continue a modest research agenda on aging, should the major emphasis be on social and economic topics or should greater emphasis be given to issues such as medical and nutrition problems of the elderly in developing countries? Or, should they focus more on the planning/financing aspects? How should they be prioritized?
- 3) Is A.I.D.'s aging research program consistent with the strategy recommended by the RAC? Is the ongoing and proposed research supported by A.I.D. appropriate for the health and aging priorities of the developing world? Are methodological issues and problems specific to the Third World being addressed appropriately?
- 4) Is the medium-term strategy still adequate and appropriate or does it require modification as it nears its completion in 1991? Should this research concept and/or its time frame be modified?
- 5) What is A.I.D.'s comparative advantage in supporting aging research? Are the current mechanisms for supporting aging research effective and still appropriate opportunities for collaboration in this research? Are there alternative mechanisms that should be considered on a longer-range basis?

At the outset of the Panel meeting, A.I.D. staff members refined the above questions to the following:

- Are the activities in which A.I.D. has engaged appropriate to the strategy? Has A.I.D. picked the right mechanisms for its approach to the issues?
- Do the programs reflect A.I.D.'s current advantage? Do they reflect the kind of resources that A.I.D., as a field based program, can bring to this issue?
- Are the A.I.D. activities coordinated with, and do they complement programs of organizations such as the World Health Organization (WHO) and the National Institute on Aging (NIA)? To the extent that the linkages are not optimal, what can be done to improve the complementarity of A.I.D.'s work with those of other organizations?

2. Background Issues on Aging

In the majority of A.I.D. assisted developing countries, the median age continues to rise at a rapid pace. This is due, in large part, to reductions in fertility which, themselves, stem from a variety of causes - including, importantly, reductions in mortality. Although the demographic transition to low levels of fertility is far from complete, it has been underway for a sufficiently long period in many developing countries to have resulted in the rapid pace of population aging that many developing countries are experiencing.

The rise in current and projected proportions of adults and older persons within the age structure of a developing country has far reaching and significant social, economic, and medical implications. As the phenomenon of population aging accelerates, developing country governments will face new demands for resources. The changing age structure of populations, the shift in the cause structure of mortality from acute to chronic diseases, and the movement from mortality to morbidity as the dominant force in the overall health picture of a population combine to produce what has been called an "epidemiologic transition". Table 1 projects the changing patterns (between 1985 and 2015) of the age distribution of deaths and of the total population in developing countries and indicates some implications of these changes for the probable pattern of health problems. The table also illustrates dramatic population aging: while the total population of developing countries is expected to rise by 70% from 1985 to 2015, the numbers of middle-aged will increase by 139% while the number of under-5 years will increase by only 28%.

Because of this present and continuing epidemiologic transition occurring in developing countries, and the severe economic constraints faced by both developing country governments and international donors, it is imperative to examine the social, financial, and political impact of caring for an aging population. Opportunities could arise for productivity improvements due to a potentially lengthened time of persons in the work force. However, new demands will be placed on health care delivery and on social security, and new challenges will arise from emerging patterns of consumption and changes in social support systems.

The above are just some of the many issues raised by the phenomenon of population aging. Other concerns include: a) rural and urban differences in both the availability of health care services and in the structure and speed of population aging, b) implications of gender differences in life expectancy and, c) significance of rates of disability on social structures and family care-giving practices.

Table #1: Health Problems of Different Age Groups

Age Group	Population in Developing Countries, millions			Deaths in Developing Countries, millions		Important Health Problems	
	1985	2015	%increase '85 - '15	1985	2015	Problems on the Unfinished Agenda	Neglected and Emerging Problems
	Young children (0 - 4 years)	490	626	28%	14.6	7.5	Diarrheal disease ARI Measles, tetanus, polio PEM Micronutrient deficiencies Malaria
School-age children (5 - 14 years)	385	1196	35%	1.6	1.3	Schistosomiasis Geohelminth infection Micronutrient deficiency	Disability
Young adults (15 - 44 years)	1667	2918	75%	5.0	6.0	Maternal mortality Malaria Excess fertility	Tuberculosis Injury AIDS STDs Mental illness
Middle-aged (45 - 64 years)	474	1131	139%	5.9	10.4		Cardiovascular disease Cancers COPD
Elderly (65+ years)	153	358	134%	11.0	22.5		Diseases of middle-aged plus: Disability (mental, sensory, motor) Depression Cataract
TOTALS	3669	6229	70%	37.9	47.7		

Source: "Selecting Disease Control Priorities in Developing Countries", by D. T. Jamison and W. H. Mosley, the World Bank, 1990.

- Notes:
1. Many of the conditions for older age groups manifest themselves clinically long after the processes leading to the clinical condition have been initiated; preventive intervention will, therefore, need to be directed to younger ages.
 2. This table presents probable trends in the developing world as a whole. Individual countries (or regions) will, of course, differ in specifics.

Failure to recognize the demographic and socioeconomic implications brought about by population aging could result in inappropriate or inadequate domestic and international responses. For this reason, it is important that A.I.D. and other interested agencies in conjunction with developing countries continue to initiate explorations of the issues of aging.

3. Recommendations on Substance

As in the 1988 review, the Panel stressed that A.I.D. should be commended for its efforts thus far in initiating a research and analysis program on aging in developing countries. The Panel also felt that A.I.D. had chosen an appropriate approach in this area by avoiding biomedical research (in favor of demographic and public health research); and by its attention to implications of the dynamics of aging as opposed to a more narrow focus on the elderly population per se. The Panel concluded that further efforts should maintain these emphases.

The Panel's recommendations begin with three general concerns, then turn to more specific suggestions.

1) A.I.D. should continue to emphasize health sector concerns.

The Panel concurred with A.I.D.'s belief that consequences of population aging are likely to be felt severely in the health sector. A rising median population age is apt to lead to an increase in the number of disabled persons and to shifting disease patterns. This fact in turn demands assessment and understanding of developing country health care systems and of private and public health services organizations and programs. This type of careful evaluation will help enable developing countries to employ cost-effective approaches to assure the health status of an aging population.

2) A.I.D. should initiate and promote cooperation among U.S. agencies and among international agencies.

Limited but important work is underway in a number of locations on aging in developing countries, with support from WHO as well as A.I.D. and the British Overseas Development Administration (ODA). Resources to allow cross-fertilization and mutual amplification of efforts have not been available. For this reason and because aging as an issue has yet to be fully acknowledged, the Panel stressed that domestic and international interagency cooperation should be actively pursued. Resources should be earmarked specifically to facilitate this objective.

3) A.I.D. should begin the shift from research, development, and training to concern with policy, services, and intervention evaluation.

The Panel emphasized that developing countries face an increasingly broad array of health concerns as populations age. In addition to enhancing research efforts, possible target areas for A.I.D. operational intervention might be in antismoking campaigns and enhanced provision of curative care for such conditions as tuberculosis and the sexually transmitted diseases. The advantage of this type of intervention is the potential to

affect a wide sector of developing country populations. For example, more women in developing countries die from tuberculosis than from maternal causes. A tuberculosis control program has the potential to decrease mortality among mothers while at the same time contribute to the health of the aging population. Another problem of particular significance in limiting autonomy among the elderly is blindness from cataract; surgical treatment of this condition (and provision of glasses) is an example of a highly cost-effective intervention that can be supported and evaluated.

Specific areas for A.I.D. action include:

- 1) **As a specific action directed toward the health sector cited in recommendation #1, A.I.D. should initiate work in descriptive epidemiology.** The Panel felt that despite advances, there is still a paucity of accurate information on the levels, trends, and causes of morbidity and mortality (in adults and the elderly) in developing countries at the low- and middle-income levels. The Panel recommended that data be aggregated into categories that start at age 15. The Panel emphasized that because there are specific interventions that, when implemented at an early age can have considerable impact on the aging process, it is essential to address aging concerns by beginning focus around age 15, if not earlier in a number of cases. (Most Panel members also felt that health concerns of school-aged children were generally neglected, even though this is not a rapidly growing age segment.) It was understood that this broad approach could potentially obscure concerns of the oldest sector of the population. However, the Panel maintained that problems of allocation of scarce U.S. and developing country resources could be better addressed by examining population aging as a process that generates much more rapid growth in some age groups than in others; these rapidly growing population segments (seen to be those over age 15 in Table 1) have different health problems which need to be better documented because of their increasing absolute and relative importance.

- 2) **A.I.D. should focus on those factors that determine the epidemiological profile of a given population.** These determinants include: age structure, socioeconomic status, environmental risks, behavioral risks, and medical intervention. The Panel recognized that each of these issues taken within their country context may or may not be politically sensitive. For example, chronic diseases may be of greater significance in some urban centers than in rural sectors. Members of urban populations may have greater

access not only to health care services but to policymakers. This factor may complicate efforts to direct scarce resources. The Panel recommended that as the epidemiology of a region is understood and assessed, potential interventions should be held to a test of cost-effectiveness and promise of service efficacy.

- 3) **The economic, social, and policy implications and consequences of existing conditions should be investigated.** This action presents potential opportunities to address specific recommendation #2. Consideration of the above implications include examination of the social security and welfare systems, labor and workforce shifts, retirement provisions, family structure, and the implications of independence and autonomy versus disability. The Panel pointed to the need for understanding and assessment of the cost of financing mechanisms, the changing economic conditions of a given country or smaller community, the role of family and care givers, and the kinds of interactions between the elderly and children in a given society.

The Panel felt that work on descriptive epidemiology (specific recommendation #1) and on assessing risk factors and evaluating cost-effective intervention (specific recommendation #2) has priority over research on consequences.

4. Recommendations on Implementation Mechanisms

The Panel stressed that the issue of aging should be addressed by understanding this phenomenon as a socially productive process. It recommended certain mechanisms by which A.I.D. could strengthen its capacity to assist countries with relevant service delivery, with policy improvements, and with research (Table 2). The mechanisms divide into those internal to A.I.D. and those external to it.

1) Within A.I.D.:

- Development of an ongoing means of review and evaluation of A.I.D. interventions and their effectiveness, including consideration of the development of new programs (e.g., for tuberculosis control) that address the needs of aging populations;
- Leveraging of internal resources, such as money in the A.I.D. missions;
- Development and maintenance of ties between health and other sectors of A.I.D. that are involved in issues that affect aging, i.e., women, nutrition and welfare; and
- Internal leadership development.

2) External to A.I.D.:

- Institution strengthening and encouragement of long-term cooperation between institutions in developing countries and in the U.S. Using the successful experience with institutional twinning in the agricultural sector as a model, A.I.D. might consider long-term financing (10 years, say) for 3 to 5 teams consisting of a U.S. and a developing country university to conduct collaborative research and training programs on the priority subjects outlined in the preceding section.
- Promotion of knowledge utilization through the use of information dissemination and seminars. The Panel emphasized that dissemination alone would not always be an adequate means for communication of acquired knowledge. Alternative, more interactive methods of information exchange should be explored. Close cooperation with other groups supporting analysis in this area (e.g., WHO and the British Overseas Development Administration) should be encouraged.
- Promotion of research conducted by developing country nationals.

Table #2: Instruments of Aid

Objective	Modality of Assistance	
	Program Implementation	Capacity Strengthening
1. Service Delivery	Programs for control of tuberculosis. Programs for cataract removal.	Improve Training of medical and public health personnel in <u>cost-effective</u> approaches to preventing and dealing with conditions of adults and the elderly.
2. Policy Improvement	Antismoking efforts	Strengthen developing country demographic, epidemiological and policy formulation capacity in the areas of health and social security responses to aging.
3. Undertaking Research (including epidemiologic, evaluational and economic analyses)	Undertaking surveys of patterns of disability and cause of death among adults and the elderly.	Develop essential national research capacity on aging through "twinning" of U.S. and developing country universities for research and training.

The Panel stressed the importance of infrastructure strengthening to ensure that the fruits of research are translated into policy relevant language. For this purpose, the Panel noted the need for human resource development of policy analysts who could bridge the current gap between researchers and policy makers. Translation of research results into policy relevant terminology and the development of skills within developing country organizations (e.g., Ministries of Health, Ministries of Labor) are necessary in order to encourage informed decision making.

The Panel also noted the inherent difficulty in marketing research and interventions on aging. In order to combat this problem the Panel suggested that while A.I.D. should direct its attention to the health sector concerns of aging, it should continue and expand efforts to market the subject across disciplines within the Agency in order to assure that relevant topics such as housing, social security, and the impact of varying levels of education are adequately addressed.

The Panel recommended that in light of the importance of issues of aging in developing countries, A.I.D. should consider allocating a greater proportion of funds to this area. A.I.D.'s current financial resources were not assessed in depth. However, the Panel felt strongly that the current levels of funding are inadequate. The Panel suggested increased cooperation with other U.S. organizations in order to leverage already existing fiscal resources. In addition, a modest shifting of resources now, in order to anticipate problems of resource allocation for aging populations, will enable investments in housing, transportation, welfare, and health care to be made on a timely basis.

Annex A

LIST OF BACKGROUND DOCUMENTS

1. Agency for International Development. March 1990. Request for Review. Letter from the Office of Research and University Relations, Bureau for Science and Technology, Washington, D.C., USA.
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Annex B

LIST OF MEETING PARTICIPANTS

Panel

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