PD-ABB-273

# BUREAU FOR SCIENCE AND TECHNOLOGY

# DIRECTORATE FOR HUMAN RESOURCES

# OFFICE OF EDUCATION

# FY 92

# ACTION PLAN

S&T/EDUCATION
ACTION PLAN

**S&T Office of Education**
**Plan of Action**

## I. STRATEGY

Within A.I.D.'s mandate to strengthen human capacities in the developing world, the S&T Office of Education pursues two goals:

-- To attain an acceptable quality of basic education for at least 80% of children, together with decreasing adult illiteracy by 50% by the Year 2000 (as articulated by the World Conference on Education for All, March 1990); and

-- To improve health, increase agricultural productivity, and ensure environmental protection in A.I.D. cooperating countries by effecting changes in behavior and practice through the use of development communications.

### A. Basic Education Rediscovered

Consensus now exists that basic education -- including the first ten years of schooling, literacy, numeracy, and life skills -- provides the foundation for sustained success in family planning, child health, economic growth, and the extension of pluralistic systems. This consensus arises from empirical evidence accumulating from studies in many areas.

Economic historians show conclusively that no country has achieved dramatic economic growth in the period 1850 to the present without first attaining universal primary education (IBRD, Improving Primary Education, 1990, p.2). More sector specific research reveals surprisingly high correlations between the rate of literacy, particularly female literacy, and the success of measures to increase economic productivity, extend life expectancy, reduce fertility rates, and to expand the participation of individuals in the life of their group or nation. To cite examples:

-- Studies from 13 developing countries concluded that four years of primary education increased farmer productivity by 8.7 percent across all countries and by 10 percent in countries (typically Asian) undergoing modernization (Lockheed, Jamison, and Lau, 1980).

-- Child mortality is shown to decrease by 9 percent for every year's increase in the mother's education. In Africa, a one percentage point increase in the national literacy rate is associated with a two year gain in life expectancy (Cochrane, 1986).

-- Fertility rates decrease as the proportion of women with some education increases. While population research has provided compelling evidence of the effect of women's schooling and literacy on overall reductions in fertility, these trends show up most clearly in later stages of development and with more than a few years of education. (Research Triangle Institute, Educational Impacts Model, 1990).

Behind these results is the general finding that an effective basic education program powerfully enhances and sustains specific programs in agriculture and industry, in child survival, health, and in family planning. The combined effect of basic education taken together with any of the specially targeted programs is greater than the sum of the two, taken individually. An analysis of Nigerian villages, for example, suggests that the gain in life expectancy at birth was 20 percent when the sole intervention was easy access to adequate health services for illiterate mothers; 33 percent when the intervention was education without health services; but 80 percent when both activities were undertaken together (J. C. Caldwell, 1986).

Here at home during the 1980's, American industry pointed to the crucial importance of sound schooling for a U.S. work force which can remain competitive in today's global economy. This concern is providing the primary impetus behind U.S. education reform. Internationally, the widespread apprehension in both developed and developing nations that basic education systems are failing to answer the needs of society brought leaders from 150 nations and the major development agencies together in March, 1990 for the extraordinary World Conference on Education for All, held in Thailand. The U.S., through A.I.D., with support from the Department of Education, private industry, and NGOs, played a leading role in co-sponsoring the World Conference.

For the past 20 years, S&T's Office of Education has funded the research and development of some of the most promising systems available today for improving basic education in the developing world. The work of this Office over the next decade is to link leading sources of U.S. education reform, both public and private, with willing partners in LDC's, in order to adapt and extend proven methods and techniques and to develop new ones:

-- for the improved planning and administration of schools and school systems, including education assessments, management information systems, and decentralization strategies;

-- for increased learning, including the enhancement of school readiness for young children, technology aided instruction, improved math-science curricula, and evaluation techniques; and

-- for sustained nonformal approaches, creating indigenous service agencies to strengthen those community-based NGOs which are involved in functional literacy and other important training in life skills for those without access to schooling.

This Office will monitor the success of these methods and techniques to assure (1) that they make current host country spending more effective, and, (2) that they provide information which can guide major new investments in basic education by A.I.D. and the World Bank and our other international partners.

B. Development Communications Applied

Over the past ten years, the Office of Education has collaborated with other S&T offices to apply communication research, behavioral science and social marketing techniques to areas of central concern to A.I.D. Beginning with nutrition, S&T/ED has applied this knowledge to programs in public health, including AIDS prevention and control, and, most recently, to the problem of narcotics awareness and education. The adaptation of development communication methodologies to the transfer of agriculture technology has produced a promising interactive approach to extension.

With this diverse experience, S&T/ED has built capacities in applied behavioral science and communications which will be of service to the Agency and the donor community generally in the decade of the 1990's. During this time we foresee the application of these capacities to new areas of concern. In this ABS submission, the Office proposes to begin work on environmental issues in collaboration with other sources of expertise in the Bureau. Our object will be to test and adapt development communications systems at a country level to achieve public understanding of environmental issues and to bring about changes in public practices which support a sound environment.

II. OBJECTIVES

A. BASIC EDUCATION

Our goal is to assure an acceptable standard of learning achievement by 80 percent of children in developing countries, while reducing adult functional illiteracy by half. To achieve this goal the quality of, and access to, education must improve dramatically. This must happen both within schools and through nonformal systems.

1. Objective One: To guide the planning of basic education systems in A.I.D. cooperating countries by the best available techniques in information, research, and analysis.

a. The BRIDGES project, under a cooperative agreement with Harvard University, will continue to apply the results of its research to effect alternative educational policies. Among the tools developed by BRIDGES is a series of computer planning models which permit planners and practitioners to assess the various impacts on student performance of different policy choices.

b. The IEES project will continue to develop and apply a system for education sector planning. Under this project Florida State and its sub-contractors will assist selected countries to plan and implement education reform. From this experience, the IEES project is deriving methodologies which guide the major education investment programs of A.I.D. and other donors.

c. The ABEL project, which started in September 1989, was designed to assimilate the research findings and the methods developed by BRIDGES and IEES, and to use these results to answer special requests for planning basic education systems. In its first eight months, Project ABEL proved particularly useful to A.I.D.'s Africa Bureau in the design of new country programs (in Mali, Ghana, and Uganda) as required by the Congressional basic education earmark.

2. Objective Two: To improve the management of basic education systems by the adaptation of EMIS, monitoring, and evaluation methods to the needs of A.I.D. cooperating countries.

The cost and administration of the national schools is the heaviest burden which a government in the developing world bears, second perhaps only to its military establishment. Education costs often approach a quarter to a third of public expenditures. To provide help in this critical area, S&T/ED has developed education management information systems (EMIS) which the BRIDGES and IEES projects have tested in difficult situations (Somalia, Nepal, Indonesia, Egypt, and Pakistan). Project ABEL will build on this experience to ensure a wider diffusion of EMIS systems. ABEL is also designed to provide assistance in, and derive lessons from, the nuts and bolts of school-level administration. Project ABEL has a special brief to review and encourage the education of girls and women. Finally, the ABEL project is charged with introducing and adapting effective systems for monitoring and evaluating the management of the basic education establishment.

3. Objective Three: To improve student achievement by the adaptation of learning technologies and other advances with high potential for A.I.D. cooperating countries.

Much of S&T/ED's effort until now to increase overall teacher effectiveness and improve student learning has been concentrated on improved educational technology. Interactive Radio Instruction (IRI) has received the lion's share of our resources and attention. Sustained investment in research and development for the teaching of primary school math, language, and (most recently) science using interactive radio has consistently yielded the largest and most cost-effective learning gains of any intervention tested in the developing world.

With the R&D phase now complete, and with the system reasonably well established in Latin America, the dissemination of IRI to Africa and Asia is underway with growing support from other donors. As evidence, the

World Bank and UNESCO will co-sponsor a major workshop on radio learning in Tanzania in September, 1990. The Learning Technologies project, while leading this effort for S&T, will at the same time broaden its scope to explore further other technologies which an earlier project has shown may substantially improve student achievement. These will range from hand-held electronic devices to videodiscs and computers. The costs of these tools are expected to decline sharply in the 1990's.

The Educational Quality project, scheduled to begin in FY 1991, will in two ways assist education reform programs aimed at improved learning. First, the project will introduce research techniques to study teaching practices in the classroom and to determine how these practices and other factors affect student learning. This pragmatic approach to education research is extremely rare in most of the developing world. Second, the project will work with cooperating countries to apply and adapt U.S. expertise in performance assessment. The project thus will provide host government officials with the means to monitor the effect of basic education reforms on actual student achievement. This area is distinct from the monitoring of administrative reforms, which uses indices such as attendance and dropout rates and which is performed using EMIS and the other tools employed by the on-going projects BRIDGES and IEES.

Finally, we propose to begin a new project in FY 1992 to strengthen student achievement at the secondary school level in the areas of math, science, and technology. The MAST project, by drawing on innovations underway in the U.S., the U.K. and such newly industrializing countries as South Korea, will seek means for improving LDC student performance in this crucial portion of the curriculum at the upper range of "basic education," where LDC students currently score at only half the level of students in developed countries.

4. Objective Four: To expand the range of educational services available to adults in A.I.D. cooperating countries through effective, sustainable nonformal education systems.

This training for youth and adults without access to formal schooling will impart permanent literacy and life skills associated with important national objectives, such as productivity and health. Community-based NGOs will conduct most of the training. Through a new project which we propose to begin in FY 1992, All-sector Service Agencies for Nonformal Training and Education (ASANTE), S&T/ED will assist the creation of country level institutions, called service agencies, to empower local training on a cost-reimbursable basis. Earlier A.I.D. experience in the creation of service agencies in Ecuador and Lesotho, agencies which still survive and prosper, will guide this project.

In working towards the above four objectives, it is our purpose to strengthen the relationships which the Office has formed with the U.S. Department of Education (USED) and with the NGO community in the preparation for the World Conference on Education for All in March, 1990. Through a new component of the ABEL project, S&T/ED proposes to

begin a number of small-scale activities to match selected NGO's with appropriate basic education programs in A.I.D. cooperating countries. We will do so where such activities can forward the objectives outlined above by lending expertise and leveraging increased funding. Similarly, the Office will consider facilitating relationships between LDC educators and the U.S. Education Centers and Laboratories. These Centers and Labs for applied educational research, partially funded by the U.S. Government, concentrate on all of the areas which are concerned with our objectives. Together with USED's data base system (ERIC), selected U.S. Centers and Labs may be ripe for collaboration with certain LDC educators and institutions in A.I.D. cooperating countries.

B. DEVELOPMENT COMMUNICATIONS

1. Objective One: To transfer and adapt successful communications approaches developed for agriculture and health initiatives. In agriculture, FY 1992 will be the final year of funding for the CTTA project (Communication for Technology Transfer in Agriculture), managed jointly with the Office of Rural and Institutional Development. Development communications methods developed under CTTA, unlike traditional extension approaches, have been received with enthusiasm by A.I.D. cooperating country professionals, and have proven effective. During FY 1991 and 1992, we will further diffuse these methods and evaluate new applications.

Concurrently, S&T/ED's collaboration with the Office of Health has generated a major new public health focus on the use of communications for helping people change their health practices, especially those related to oral rehydration, immunization, and AIDS prevention. A development communications expert from the Office of Education, on part-time secondment to S&T/Health, will continue as the principal technical advisor to the Bureau's AIDS prevention and control programs (AIDSCOM and AIDSTECH). This Office will also continue its technical involvement with S&T/H's Healthcom project, as may be required.

2. Objective Two: To assist A.I.D. cooperating countries to design, manage, and evaluate narcotics awareness and education activities.

S&T/ED's Narcotics Awareness and Education (NAE) project, launched in May, 1990, concentrates on reducing drug demand in selected LDC's at high risk through development communications programs for public awareness and education. The remarkably high level of Mission interest to buy into the NAE project will help this become a powerful engine for research on effective narcotics communications strategies. We expect the NAE activity will accelerate field activity substantially in this new problem area.

3. Objective Three: To strengthen the capability of A.I.D. cooperating countries to undertake programs for public education and behavior change which safeguard the environment.

This Office is requesting funds in FY 1992 to begin a new project, Environmental Education and Communication (GREENCOM), which will bring to bear on environmental problems the experience which the Agency has gained in development communications in the agriculture and health areas. GREENCOM will assist selected countries to design, manage, and evaluate information and education programs which bring about changes in individual and institutional behavior as necessary to safeguard the environment.

4. Objective Four: To strengthen capacity in Africa, Asia, Eastern Europe, and Latin America to design and operate modern telecommunications systems.

In FY 1990, S&T/ED accepted management responsibility for the USTTI project. Through USTTI, the Agency covers partial travel and per diem expenses of LDC technical and management personnel in the telecommunications field who receive short-term training by leading U.S. firms. While 50 percent of the officials trained are African, the USTTI program broadened in FY 1990 to accept Eastern Europeans for the first time. The demand for U.S. communications training is expected to grow precipitously in FY 1991 and 1992, from the countries of Eastern Europe

[redacted]

Increment One: An additional $75,000 for the ABEL project will permit the Office to support linkages between selected U.S. educational Centers and Laboratories and A.I.D. partner countries in areas which support our program priorities, e.g., learning assessment and adult literacy. These funds may also support NGO linkages which promise the sharing of significant experience and the leveraging of additional resources in priority areas. With this funding, S&T/ED will help to strengthen and expand the U.S. domestic network of private and official organizations which was so successful in this country's performance at the World Conference on Education for All (WCEFA).

Increment Two: An additional $75,000 for the Educational Quality project will test the comparative importance of Head Start-type programs for learning achievement in A.I.D. partner countries. These funds will support the International Consultative Group on Early Childhood Education (a group A.I.D. helped to establish in 1983) in the Group's efforts to measure the differences in developing countries which pre-school preparations can make on student performance in the early grades and on student continuation in school later on.

If the findings from LDC's are strongly positive, as the U.S. experience has been, S&T/ED will consider a major undertaking in the early childhood area. This would occur, perhaps in collaboration with other S&T Offices, later in the 1990's.

Increment Three: A sum of $350,000 to start the proposed GREENCOM project. Among the three new activities which S&T/ED proposes in this ABS, we place this project first. We do so in view of the urgent priority which A.I.D. gives to environmental matters, and given the centrality of communications and behavior change strategies to the Agency's success in the environmental area.

Increment Four: A sum of $350,000 to start the project All-Sector Service Agencies for Nonformal Training and Education (ASANTE). Conferees at WCEFA determined that 100,000,000 children of primary school age remain outside formal school systems and large proportions of adults in the developing world will never have the chance to enter. ASANTE will mark the Agency's first activity in some time to support permanent literacy and life skills training through nonformal systems, by strengthening the training capacity of community based NGO's. The project recognizes the important correlations between literacy, particularly for women, and sustained success in areas of importance for A.I.D., including family planning, child survival, and economic productivity. While A.I.D. may continue to be a modest player in the adult literacy arena, the number of approaches which LDC's have sustained successfully is sufficiently small that ASANTE may have a major leveraging effect. Building on the enduring success of an earlier A.I.D. project, ASANTE should bear fruit quickly.

Increment Five: A sum of $350,000 to start the Math, Science, and Technology project (MAST). S&T/ED places this important project in fifth priority because it is the most recently conceived. Its importance lies in the urgent need to improve secondary school math and science curricula, and to increase student familiarity in the developing world with technology. The strength of MAST lies in the new wave of U.S. domestic reform in these subjects, in the potential for linking up with major curricula reform in these areas in the U.K. and South Korea, and in A.I.D.'s success in the 1960's in creating primary level math-science networks, particularly in Africa.

Increment Six: A sum of $350,000 to pay travel and per diem costs for participants who are invited to receive training under the USTTI (Telecommunications Training) project. American firms which give this short-term training will considerably increase the training they offer, we expect, especially in view of the requirements in Eastern Europe. This sum an increase over the $200,000 provided in FY 90, will permit A.I.D. to keep pace, in part, with the growing supply and demand for this training. In view of our reclama for funds in FY 1991 and FY 1992 to run this project, S&T/ED has not budgeted funds from its regular operating allocation in either year for the USTTI activity.

## IV. CROSS-CUTTING THEMES AND PROGRAM COORDINATION

The importance of basic education and development communications for sustained development in all the sectors in which A.I.D. is active has ensured a strong degree of collaboration with other offices within the S&T Bureau. Field recognition of these important correlations has also resulted in a high proportion of Mission buy-ins to Office projects, running at roughly 2:1 in recent years. In FY 1989, buy-ins to projects which S&T/ED either managed or helped to manage (e.g., AIDSCOM) amounted to $11.3 million, compared with $6.9 million in obligations from S&T/ED funds. Projections in FY 90, as of June 1990, were similar: $12.9 million buy-in vs. $6.0 million S&T/ED core monies.

In sustainable agriculture, the CTTA project throughout its life has been jointly managed with the Offices of Rural and Institutional Development and, earlier, Agriculture. S&T/ED has provided the expertise on communications and social marketing, while the other two Offices have kept the project well-grounded in agricultural technology and in institutional development issues.

For child survival, S&T/ED continues to provide consultation to the Office of Health on the Healthcom project. This Office in collaboration with S&T/Health developed the Healthcom model for oral rehydration and immunization. S&T/ED managed Healthcom during its first seven years, as the communications and behavior change methodologies were being developed. When the approach proved itself, Healthcom moved into a phase

of major expansion and now works in over 17 countries. At the point of expansion, S&T/Health took over the management of the project, with our advice and participation through its Technical Advisory Group and other means.

In the area of AIDS prevention, S&T/ED developed the AIDS education and communication element of the project, AIDSCOM. Until now, S&T/ED has managed that element of the activity under the guidance of the Agency's AIDS Coordinator in the Office of Health. In FY 1991 AIDSCOM and AIDSTECH will come under unitary management within S&T/H. This is the point which at AIDSCOM will transit from an R&D to a technology transfer program. After that time, S&T/ED will continue to provide principal technical assistance and advice to AIDSCOM and the sister project AIDSTECH through an S&T/ED officer seconded part-time to the Health's "AIDS Cluster."

As indicated earlier, we anticipate close collaboration with the Office of Forestry, Environment and Natural Resources in the area of Global Climate Change and environmental programs.

S&T/ED also has a very strong network of collaborative activities in basic education. A majority of those Missions with basic education activities participate in S&T/ED projects, primarily through buy-ins. Our project personnel, and S&T/ED core staff, have been involved in the initial planning and design of most of the recent or projected new starts in Basic Education--in Pakistan, Mali, Ecuador, Swaziland, Lesotho, Uganda, Malawi, Ghana, Guinea, and other countries. The Basic Education Workshop which is scheduled to take place in West Africa for a week in September, 1990 will be co-sponsored by this Office and the Bureau for Africa. The Workshop will involve representatives from all S&T/ED basic education projects.

S&T/ED also serves to provide education/communication expertise in countries that do not at present have A.I.D. bilateral basic education programs. S&T/ED projects now fulfill this function in Nepal, Thailand, Bolivia, Sri Lanka, Costa Rica, Belize, Grenada, Jordan, and Papua New Guinea.

S&T/ED maintains a significant relationship with PPC's Office for Women in Development. The WID Office provides substantial funding for a female education component of the ABEL project, which is pioneering new opportunities for higher quality education for girls.

Finally, we should note collaboration with the regional bureaus in developing the new Narcotics Awareness and Education activity (NAE). This project could not have begun without the urging and the professional collaboration of the Bureaus and field Missions, particularly for Latin America. As a result, buy-ins developed at a very rapid pace even in the first month of project life.

## V. NEW PROJECT DESCRIPTION

Project title: ENVIRONMENTAL EDUCATION AND COMMUNICATION (GREENCOM)

Project number: 936-5839

Initial year of Obligation: FY 1992 PACD: FY 2002

First year of funding: Core $350K; Buy-in $700K LOP: $20 Million

Project Goal: GREENCOM will support Agency policy and program efforts to establish practices which foster a sound environment.

Project Purpose: The project will assist in the development of a receptive set of attitudes for policy change and program initiatives for environmental protection. By means of information and education programs, the project will seek to bring about changes in individual and institutional behavior which are essential to safeguarding the environment.

Problem: Stagnant and declining productivity associated with environmental degradation and with the depletion of natural resources are now widely accepted as impediments to global development. To devise appropriate policy and program responses to this problem, developing countries require various kinds of assistance. There are several essential elements, however, to all effective responses:

(1) research to define the extent of the problem and response options;

(2) analysis of policy options;

(3) information and education programs which will prepare the public to accept policy changes and program initiatives; and

(4) information and education programs which will help to bring about change in individual and institutional behavior.

GREENCOM will concentrate on these final two elements, and will complement other A.I.D. support for elements one and two.

Project Description: GREENCOM will support individual and institutional change in developing countries through public awareness and education. The project will provide technical assistance, operations research, evaluation research and information dissemination. Lessons learned from the operations research, evaluation research and country specific strategies will be used to develop an overall strategic methodology for environmental information and education programs. The project will emphasize the institutionalization and sustainability of environmental communication programs.

## NEW PROJECT DESCRIPTION

Project title: ALL-PURPOSE SERVICE AGENCIES FOR NON-FORMAL TRAINING AND EDUCATION (ASANTE)

Initial year of obligation: FY92 PACD: FY97

First year of funding: Core $350k; Buy-in $500k LOP: $7 Million

Goal statement: To improve learning opportunities for persons without access to schooling.

Purpose: To develop service agencies which will strengthen the training capacity of development organizations, agencies and groups for which the ability to deliver effective nonformal education is critical to their success.

Problem: The large sums of money being spent on LDC extension services and other forms of nonformal education frequently fail to purchase the information transfer and behavioral changes which the programs were designed to achieve. Much of that lack of effectiveness arises from a lack of awareness of good training practices and an almost total lack of teaching materials.

Project: The project will seek out organizations which are partial or potential service agencies, identifying at least one such organization in each of ten countries. The project will provide technical assistance and training to prepare these agencies to market and offer their services to local NGO's which need to improve the nonformal education elements of their programs. The service agencies will strengthen the education and training offered by development programs through developing participatory, client-centered teaching materials, by teaching extensionists and trainers to use them properly, and by designing evaluation protocols based on the target audiences' behavioral changes and community improvements.

This project will build on experience acquired in the Office's most recent nonformal education project, which developed and successfully institutionalized service agencies in Ecuador and Lesotho. This project's emphasis will be on dissemination to strengthen and make self-supporting several among the growing number of nascent service agencies which would benefit from technical assistance.

NEW PROJECT DESCRIPTION

Title: MATH, SCIENCE, AND TECHNOLOGY EDUCATION

Initial Year of Obligation: FY92 PACD: FY99

First Year Funding: Core $350k; Buy-in $350k LOP: $6 million

Goal: To improve student achievement in LDC's, particularly in content areas central to national economic development.

Purpose: To develop widely applicable methods, teaching materials, and media for more effective instruction in math, science, and technology education at the secondary level.

Problem to be Addressed: If developing nations are to take their place in an increasingly technological world, the number and quality of people with competency in science and mathematics must be markedly increased. The problem cannot be solved at the college level alone. Comparative testing has shown that students who complete high schools in representative LDC's typically know only about half as much mathematics as students in the developed world. Science education, too, typically prepares students in developing countries very poorly for entry into college-level science courses, since it is usually taught in either an entirely theoretical or rote manner by teachers whose own scientific education is limited.

Project Description: This will be an educational research and development program to generate approaches and materials that can transform the quality of math and science learning, yet be widely adaptable within LDC budgetary and human resource constraints. World-wide experience will be collected and analyzed for elements that may be transferable; successes are growing, in such countries as Korea, Zimbabwe, Tanzania (Zanzibar), some European nations, and the U.S. The Agency's experience in primary school mathematics and science teaching will also be assessed--e.g., the educational methods that underlie the success of the "interactive radio" system, and earlier work in African math and science education.

Remarkable successes in this country in math teaching have been achieved simply by re-structuring textbooks along "mastery learning" methodologies; South Korea has used a similar approach with a variety of media and teacher re-training. There are also several promising approaches in science teaching. While R&D will be needed, and while analysis of the skills and ways of thinking LDC students bring into the classroom will be productive, the probability is that fairly rapid progress can be made in providing practical, tested tools for a variety of situations.

We will closely collaborate with the World Bank (for whom this is potentially a high priority in Africa), the U.K. which is developing and will be exporting "technology education," South Korea, and the Rockefeller Foundation.

## VI. MANAGEMENT CONCERNS

In the second half of the current Fiscal Year when this ABS was prepared (June, 1990), the Office of Education operated with the following personnel level:

| | |
|---|---|
| Full-time professionals: | five |
| Part-time professional: | one |
| Full-time secretarial: | two |

Beginning in September, 1990, S&T/ED will add two full-time AAAS professionals, each with a commitment of up to two years:

-- the first AAAS fellow will assist the Acting Deputy Director to develop the Education Quality project, scheduled to begin in FY 1991, and to help him prepare analyses and the Concept Paper for the Mathematics, Science and Technology (MAST) Project requested for FY 1992.

-- the second AAAS fellow will assist the Office Director to strengthen the network of public and private U.S. institutions which came into being for the WCEFA Conference, and to devise linkages between certain of these institutions and selected partners in A.I.D. cooperating countries.

At the same time, S&T/ED recruited for two permanent professional staff members at the GS-14 level, one part-time and the other full-time. The new part-time officer will manage the Narcotics Awareness and Education (NAE) project under the technical guidance of the Development Communications Officer, thus affording that officer the extra leeway he will need to prepare the Environmental Education and Communication (GREENCOM) project, requested for FY 1992.

The new full-time officer, who will also move into position in FY 91, will assist in the development of the Quality and MAST projects as well as shouldering project management responsibilities.

This staff complement, including the two AAAS fellows, should be adequate to design and manage the portfolio requested at the AAPL level in this submission. This complement exactly fits assigned office space.

Office limitations, however, occur in four areas:

1. Secretarial coverage for the current complement is already thin, with a three year filing backlog and with Officers often pressed to prepare their own cables and correspondence. A third full-time secretary will be required as the professional staff increases from six officers to ten.

2. As the project portfolio grows in complexity by FY 1992, the part-time Program Officer position should be extended to a full-time position.

3. Travel funds are extremely inadequate, even at current staff levels, permitting less than one overseas trip per officer on average per year. While AAAS Fellows bring their own travel budget, the addition of two more permanent staff with project management responsibilities will constrain travel to virtual immobility. The annual travel budget should be increased to a minimum of $5,000 per professional officer.

4. Office copying equipment is deficient, with our small slow-speed (Kodak 40) copier to service S&T/ED, the Human Resource front office, and the "AIDS Cluster." With the addition of four new staff in S&T/ED, we will require a new faster copy machine.

SCIENCE AND TECHNOLOGY BUREAU
TABLE III - PROJECT OBLIGATIONS BY APPROPRIATION ACCOUNT
FY 1990 TO FY 1992



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REPORT: TABLE3

| PROJECT | DPRP? (Y) | PROJECT TITLE | FY 90 OYB ($ WHOLE) | REVISED FY 91 CP ($ WHOLE) | FY 92 MCC ($ 000) | FY 92 RANK | FY 92 INCR ($ 000) | FY 92 TOTAL ($ 000) | $$ ABOVE AAPL ($ 000) | ITEM # |
|---|---|---|---|---|---|---|---|---|---|---|
| EDUCATION AND HUMAN RESOURCES DEVELOPMENT, DEVELOPMENT ASSISTANCE | | | | | | | | | | |
| 931-1109. | | EDUC TECH: STUDIES + APPLICATIONS | 275,000 | 350,000 | | | | --- | | 45 |
| 936-5818. | | LEARNING TECHNOLOGY FOR BASIC EDUCATION | 595,000 | 1,075,000 | 1,300 | | | 1,300 | | 273 |
| 936-5823. | | IMPROVING EFFICIENCY OF ED. SYSTEMS II | 908,000 | 1,325,000 | 1,250 | | | 1,250 | | 275 |
| 936-5824. | | BASIC RES & IMPLEM FOR DEVELOPING EDU SY | 328,000 | 300,000 | 325 | | | 325 | | 276 |
| 936-5826. | | COMMUNICATION FOR TECH TRANSFER IN AGR. | | 225,000 | 150 | | | 150 | | 278 |
| 936-5831. | | DEV. COMMUNICATIONS CLEARINGHOUSE II | 305,000 | 300,000 | 325 | | | 325 | | 282 |
| 936-5832. | | ADVANCING BASIC EDUCATION & LITERACY | 1,252,000 | 1,275,000 | 1,400 | 1 | 75 | 1,475 | | 283 |
| 936-5834. | | NARCOTICS AWARENESS & EDUCATION | | 400,000 | 450 | | | 450 | | 285 |
| 936-5835. | | CARIBNET PROJECT | 1,000,000 | 200,000 | | | | --- | | 286 |
| 936-5836. | | IMPROVING EDUCATIONAL QUALITY | | 350,000 | 750 | 2 | 75 | 825 | | 369 |
| 936-5838. | | USTTI | 120,000 | --- | | | | --- | | 2347 |
| 936-5839. | | ENVIRONMENTAL EDUCATION & COMMUNICATION | | | | 3 | 350 | 350 | | 3087 |
| 936-5840. | | SERVICE AGENCIES FOR NON-FORMAL EDUCATIO | | | | 4 | 350 | 350 | | 3088 |
| 936-5841. | | MATH, SCIENCE & TECHNOLOGY EDUCATION | | | | 5 | 350 | 350 | | 3089 |
| | | * * TOTAL FOR EH | $4,783,000 | $5,800,000 | $5,950 | | $1,200 | $7,150 | $0 | |
| AGRICULTURE,RURAL DEV. AND NUTRITION | | | | | | | | | | |
| 936-5826. | | COMMUNICATION FOR TECH TRANSFER IN AGR. | 284,000 | --- | | | | --- | | 279 |
| 936-5838. | | USTTI | 80,000 | --- | | | | --- | | 2348 |
| | | * * TOTAL FOR FN | $364,000 | $0 | $0 | | $0 | $0 | $0 | |
| SELECTED DEVELOPMENT PROBLEMS | | | | | | | | | | |
| 936-5834. | | NARCOTICS AWARENESS & EDUCATION | 327,000 | --- | | | | --- | | 2609 |
| 936-5838. | | USTTI | | | | 6 | 350 | 350 | | 3086 |
| | | * * TOTAL FOR SD | $327,000 | $0 | $0 | | $350 | $350 | $0 | |
| | | TOTAL FOR ST/ED | $5,474,000 | $5,800,000 | $5,950 | | $1,550 | $7,500 | $0 | |

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SCIENCE AND TECHNOLOGY BUREAU
TABLE IIIB - PROJECT OBLIGATIONS BY OFFICE
FY 1990 TO FY 1992

ST/ED

ST/PO RPT: T3ENHNCD

| PROJECT | DPRP? (Y) | PROJECT TITLE | FY 90 OYB ($ WHOLE) | REVISED FY 91 CP ($-WHOLE) | FY 92 MCC ($-000) | | FY 92 RANK--INCR ($-000) | FY 92 TOTAL ($-000) | $$ ABOVE AAPL ($-000) |
|---|---|---|---|---|---|---|---|---|---|
| 931-1109. | | EDUC TECH: STUDIES + APPLICATIONS | $275,000 | $350,000 | $0 | | $0 | $0 | $0 |
| 936-5818. | | RADIO SCIENCE | $595,000 | $1,075,000 | $1,300 | | $0 | $1,300 | $0 |
| 936-5823. | | IMPROVING EFFICIENCY OF ED. SYSTEMS II | $908,000 | $1,325,000 | $1,250 | | $0 | $1,250 | $0 |
| 936-5824. | | BASIC RES & IMPLEM FOR DEVELOPING EDU SY | $328,000 | $300,000 | $325 | | $0 | $325 | $0 |
| 936-5826. | | COMMUNICATION FOR TECH TRANSFER IN AGR. | $284,000 | $225,000 | $150 | | $0 | $150 | $0 |
| 936-5831. | | DEV. COMMUNICATIONS CLEARINGHOUSE II | $305,000 | $300,000 | $325 | | $0 | $325 | $0 |
| 936-5832. | | ADVANCING BASIC EDUCATION & LITERACY | $1,252,000 | $1,275,000 | $1,400 | 1 | $75 | $1,475 | $0 |
| 936-5834. | | NARCOTICS AWARENESS & EDUCATION | $327,000 | $400,000 | $450 | | $0 | $450 | $0 |
| 936-5835. | | CARIBNET PROJECT | $1,000,000 | $200,000 | $0 | | $0 | $0 | $0 |
| 936-5836. | | IMPROVING EDUCATIONAL QUALITY | $0 | $350,000 | $750 | 2 | $75 | $825 | $0 |
| 936-5838. | | USTTI | $200,000 | $0 | $0 | 6 | $350 | $350 | $0 |
| 936-5839. | | ENVIRONMENTAL EDUCATION & COMMUNICATION | $0 | $0 | $0 | 3 | $350 | $350 | $0 |
| 936-5840. | | SERVICE AGENCIES FOR NON-FORMAL EDUCATIO | $0 | $0 | $0 | 4 | $350 | $350 | $0 |
| 936-5841. | | MATH, SCIENCE & TECHNOLOGY EDUCATION | $0 | $0 | $0 | 5 | $350 | $350 | $0 |
| | | TOTAL FOR ST/ED | $5,474,000 | $5,800,000 | $5,950 | | $1,550 | $7,500 | $0 |

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BUREAU FOR SCIENCE AND TECHNOLOGY
041 - EDUCATION

ESTIMATED U.S. DOLLAR COST ($000)

| PROJECT NO. / PROJECT TITLE | L / G | FY OF INITIAL OBLIG | FY OF FINAL OBLIG | -LIFE OF PROJECT- AUTHD | -LIFE OF PROJECT- PLANNED | OBLIG THRU FY 1989 | FY 1990 OBLIG ATIONS | FY 1990 EXPEND ITURES | FY 1991 OBLIG ATIONS | FY 1991 EXPEND ITURES | FY 1991 YR END MORTGAGE | FY 1991 YR END PIPELINE | FY 1992 REQUEST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 931-1109 EDUC TECH: STUDIES + APPLICATIONS | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | EH G | 77 | 91 | 10,441 | 6,922 | 6,297 | 275 | 375 | 350 | 334 | --- | 80 | --- |
| PROJECT TOTAL: | | | | 10,441 | 6,922 | 6,297 | 275 | 375 | 350 | 334 | --- | 80 | --- |
| 936-5818 LEARNING TECHNOLOGY FOR BASIC EDUCATION | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 84 | 94 | --- | 3,672 | --- | --- | --- | --- | --- | 3,672 | --- | 1,300 |
| | EH G | 84 | 94 | 12,570 | 8,898 | 7,178 | 595 | 1,525 | 1,125 | 1,579 | --- | 350 | --- |
| PROJECT TOTAL: | | | | 12,570 | 12,570 | 7,178 | 595 | 1,525 | 1,125 | 1,579 | 3,672 | 350 | 1,300 |
| 936-5823 IMPROVING EFFICIENCY OF ED. SYSTEMS II | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 84 | 94 | --- | 4,276 | --- | --- | --- | --- | --- | 4,276 | --- | 1,250 |
| | EH G | 84 | 94 | 17,500 | 13,224 | 10,991 | 908 | 1,700 | 1,325 | 1,724 | --- | 350 | --- |
| PROJECT TOTAL: | | | | 17,500 | 17,500 | 10,991 | 908 | 1,700 | 1,325 | 1,724 | 4,276 | 350 | 1,250 |
| 936-5824 BASIC RES & IMPLEM FOR DEVELOPING EDU SY | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 85 | 94 | --- | 1,500 | --- | --- | --- | --- | --- | 1,500 | --- | 325 |
| | EH G | 85 | 94 | 10,000 | 6,665 | 6,037 | 328 | 750 | 300 | 500 | --- | 34 | --- |
| PROJECT TOTAL: | | | | 10,000 | 8,165 | 6,037 | 328 | 750 | 300 | 500 | 1,500 | 34 | 325 |
| 936-5826 COMMUNICATION FOR TECH TRANSFER IN AGR. | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 85 | 95 | --- | 2,000 | --- | --- | --- | --- | --- | 2,000 | --- | 150 |
| | EH G | 85 | 95 | 3,715 | 1,140 | 990 | --- | 200 | 150 | 158 | --- | 25 | --- |
| | FN G | 85 | 95 | 5,795 | 1,534 | 1,250 | 284 | 181 | --- | --- | --- | 50 | --- |
| PROJECT TOTAL: | | | | 9,510 | 4,674 | 2,240 | 284 | 381 | 150 | 158 | 2,000 | 75 | 150 |
| 936-5831 DEV. COMMUNICATIONS CLEARINGHOUSE II | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 88 | 93 | --- | 600 | --- | --- | --- | --- | --- | 600 | --- | 325 |
| | EH G | 88 | 93 | 1,203 | 973 | 343 | 305 | 290 | 325 | 285 | --- | 111 | --- |
| | SS G | 88 | 93 | 100 | 24 | 24 | --- | 24 | --- | --- | --- | --- | --- |
| PROJECT TOTAL: | | | | 1,303 | 1,597 | 367 | 305 | 314 | 325 | 285 | 600 | 111 | 325 |
| 936-5832 ADVANCING BASIC EDUCATION & LITERACY | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 89 | 98 | --- | 8,073 | --- | --- | --- | --- | --- | 8,073 | --- | 1,475 |
| | EH G | 89 | 98 | 10,000 | 2,927 | 400 | 1,252 | 1,285 | 1,275 | 1,300 | --- | 342 | --- |
| PROJECT TOTAL: | | | | 10,000 | 11,000 | 400 | 1,252 | 1,285 | 1,275 | 1,300 | 8,073 | 342 | 1,475 |
| 936-5834 NARCOTICS AWARENESS & EDUCATION | | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 90 | 98 | --- | 3,773 | --- | --- | --- | --- | --- | 3,773 | --- | 450 |
| | EH G | 90 | 98 | 3,000 | 400 | --- | --- | --- | 400 | 275 | --- | 125 | --- |
| | ES F | 90 | 98 | 300 | --- | --- | --- | --- | --- | --- | --- | --- | --- |

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| PROJECT NO. / PROJECT TITLE | L / G | FY OF INITIAL OBLIG | FY OF FINAL OBLIG | -LIFE OF PROJECT- AUTHD | -LIFE OF PROJECT- PLANNED | OBLIG THRU FY 1989 | FY 1990 OBLIGATIONS | FY 1990 EXPENDITURES | FY 1991 OBLIGATIONS | FY 1991 EXPENDITURES | FY 1991 YR END MORTGAGE | FY 1991 YR END PIPELINE | FY 1992 REQUEST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HE G | 90 | 98 | 400 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | SD G | 90 | 98 | 500 | 327 | --- | 327 | 250 | --- | 77 | --- | --- | --- |
| | SS G | 90 | 98 | 300 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | PROJECT TOTAL: | | | 4,500 | 4,500 | --- | 327 | 250 | 400 | 352 | 3,773 | 125 | 450 |
| 936-5835 | CABINET PROJECT | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 90 | 94 | --- | 400 | --- | --- | --- | --- | --- | 400 | --- | --- |
| | EH G | 90 | 94 | --- | 1,200 | --- | 1,000 | 500 | 200 | 500 | --- | 200 | --- |
| | PROJECT TOTAL: | | | --- | 1,600 | --- | 1,000 | 500 | 200 | 500 | 400 | 200 | --- |
| 936-5836 | IMPROVING EDUCATIONAL QUALITY | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 91 | 94 | --- | 2,650 | --- | --- | --- | --- | --- | 2,650 | --- | 825 |
| | EH G | 91 | 94 | 3,000 | 350 | --- | --- | --- | 350 | 150 | --- | 200 | --- |
| | PROJECT TOTAL: | | | 3,000 | 3,000 | --- | --- | --- | 350 | 150 | 2,650 | 200 | 825 |
| 936-5838 | USTTI | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 90 | 94 | --- | 1,050 | --- | --- | --- | --- | --- | 1,050 | --- | 350 |
| | EH G | 90 | 94 | 120 | 120 | --- | 120 | 120 | --- | --- | --- | --- | --- |
| | FN G | 90 | 94 | 80 | 80 | --- | 80 | 80 | --- | --- | --- | --- | --- |
| | PROJECT TOTAL: | | | 200 | 1,250 | --- | 200 | 200 | --- | --- | 1,050 | --- | 350 |
| 936-5839 | ENVIRONMENTAL EDUCATION & COMMUNICATION | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 92 | 01 | --- | 5,000 | --- | --- | --- | --- | --- | --- | --- | 350 |
| | PROJECT TOTAL: | | | --- | 5,000 | --- | --- | --- | --- | --- | --- | --- | 350 |
| 936-5840 | SERVICE AGENCIES FOR NON-FORMAL EDUCATIO | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 92 | 99 | --- | 5,000 | --- | --- | --- | --- | --- | --- | --- | 350 |
| | PROJECT TOTAL: | | | --- | 5,000 | --- | --- | --- | --- | --- | --- | --- | 350 |
| 936-5841 | MATH, SCIENCE & TECHNOLOGY EDUCATION | | | | | | | | PROJ/NON PROJ IND: PA DPRP IND: NO | | | | |
| | DP G | 92 | 99 | --- | 6,000 | --- | --- | --- | --- | --- | --- | --- | 350 |
| | PROJECT TOTAL: | | | --- | 6,000 | --- | --- | --- | --- | --- | --- | --- | 350 |

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| PROJECT NO. / PROJECT TITLE | L / G | FY OF INITIAL OBLIG | FY OF FINAL OBLIG | ESTIMATED U.S. DOLLAR COST ($000) -LIFE OF PROJECT- AUTHD | -LIFE OF PROJECT- PLANNED | OBLIG THRU FY 1989 | FY 1990 OBLIG ATIONS | FY 1990 EXPEND ITURES | FY 1991 OBLIG ATIONS | FY 1991 EXPEND ITURES | YE END MORTGAGE | YE END PIPELINE | FY 1992 REQUEST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROGRAM TOTALS: | | | | 79,024 | 88,778 | 33,510 | 5,474 | 7,280 | 5,800 | 6,882 | 27,994 | 1,867 | 7,500 |
| GRANTS: | | | | 78,724 | 88,778 | 33,510 | 5,474 | 7,280 | 5,800 | 6,882 | 27,994 | 1,867 | 7,500 |
| LOANS: | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| --- APPROPRIATION SUMMARY --- | | | | | | | | | | | | | |
| AGR., RURAL DEV. & NUTRITION | | | | 5,875 | 1,614 | 1,250 | 364 | 261 | --- | --- | --- | 50 | --- |
| POPULATION PLANNING | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| HEALTH | | | | 400 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CHILD SURVIVAL FUND | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AIDS | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| EDUCATION & HUMAN RESOURCES | | | | 71,549 | 42,819 | 32,236 | 4,783 | 6,745 | 5,800 | 6,805 | --- | 1,817 | --- |
| PRIVATE SECTOR, ENVR & ENERGY | | | | 500 | 327 | --- | 327 | 250 | --- | 77 | --- | --- | --- |
| FDAP OF DEVELOPMENT PROGRAMS | | | | 78,324 | 88,754 | 33,486 | 5,474 | 7,256 | 5,800 | 6,882 | 27,994 | 1,867 | 7,500 |
| ECONOMIC SUPPORT FUND | | | | 300 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| OTHER | | | | 400 | 24 | 24 | --- | 24 | --- | --- | --- | --- | --- |

DECISION UNIT 041 EDUCATION

| RANK | PROJECT | TITLE | NEW/ ONGOING | DPRP | PROGRAM FUNDING ($000) APPROP | INCR |
|---|---|---|---|---|---|---|
| MCC LEVEL | | | | | | |
| | 9365818 | LEARNING TECHNOLOGY FOR BASIC EDUCATION | O | NO | DP | 1,300 |
| | 9365823 | IMPROVING EFFICIENCY OF ED. SYSTEMS II | O | NO | DP | 1,250 |
| | 9365824 | BASIC RES & IMPLEM FOR DEVELOPING EDU SY | O | NO | DP | 325 |
| | 9365826 | COMMUNICATION FOR TECH TRANSFER IN AGR. | O | NO | DP | 150 |
| | 9365831 | DEV. COMMUNICATIONS CLEARINGHOUSE II | O | NO | DP | 325 |
| | 9365832 | ADVANCING BASIC EDUCATION & LITERACY | O | NO | DP | 1,400 |
| | 9365834 | NARCOTICS AWARENESS & EDUCATION | O | NO | DP | 450 |
| | 9365836 | IMPROVING EDUCATIONAL QUALITY | O | NO | DP | 750 |
| | | TOTAL REQUEST | | | | 5,950 |
| REQUEST LEVEL | | | | | | |
| 1 | 9365832 | ADVANCING BASIC EDUCATION & LITERACY | O | NO | DP | 75 |
| 2 | 9365836 | IMPROVING EDUCATIONAL QUALITY | O | NO | DP | 75 |
| 3 | 9365840 | SERVICE AGENCIES FOR NON-FORMAL EDUCATIO | N | NO | DP | 350 |
| 4 | 9365839 | ENVIRONMENTAL EDUCATION & COMMUNICATION | N | NO | DP | 350 |
| 5 | 9365841 | MATH, SCIENCE & TECHNOLOGY EDUCATION | N | NO | DP | 350 |
| 6 | 9365838 | USTTI | O | NO | DP | 350 |
| | | TOTAL REQUEST | | | | 1,550 |