

MEMORANDUM

June 25, 1986

TO: See Distribution
FROM: S&T/PO, Gerald F. Gower
SUBJECT: S&T Action Plan

Attached is the Bureau for Science and Technology FY 1988 proposed Action Plan. The Action Plan also includes ABS budget tables at the AAPL level. Dr. Brady will chair the Agency review of the S&T Action Plan, which is scheduled for Thursday, July 10 at 10:00 a.m., in Room 5951 New State.

Issues meetings are scheduled for July 2 in the Loy Henderson Room. (The Loy Henderson Room is located on the 1st floor, 23 & C Street side.) The issues meetings will be organized by development problem areas as follows:

- 10:00 - Population Pressures
- 10:45 - Health Deficiencies
- 11:30 - Education
- 2:30 - Hunger and Inadequate Income

To facilitate development of the issues for the Action Plan Review, it would be appreciated if issues and points for clarification of information are submitted in writing to S&T/PO prior to the July 2 issues meeting.

Attachment: a/s

Distribution list attached.

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BUREAU FOR SCIENCE AND TECHNOLOGY
ACTION PLAN

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June 23, 1986

BUREAU FOR SCIENCE AND TECHNOLOGY
ACTION PLAN
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BUREAU FOR SCIENCE AND TECHNOLOGY ACTION PLAN

INTRODUCTION

The Bureau for Science and Technology has recently completed for the Administrator's approval its first CPSS. That CPSS sets forth, in an integrated fashion, the strategies and emphases of the S&T Bureau in support of the Agency's attack on the five key development problems.

This Action Plan carries the CPSS conceptual strategic program framework forward to the project level. That is, the Action Plan sets forth, by development problems, the near-term objectives, benchmarks, projects and funding required to achieve the Agency and Bureau's long-term goals in conformity with the strategies set forth in the CPSS.

In addition to the Program/Budget presentation in part one of this Action Plan, part two presents selective program management objectives, constraints, and issues.

Lastly, the Program/Budget presentation includes certain budget tables normally only included with the ABS. With regard to these tables, we wish to note: (a) that the budgets are presented at the FY 1987 CP and FY 1988 AAPL levels, and (b) that the project priority ranking in the Table Vs are based on substantive considerations only.

I. Plan to Lessen Hunger

I.1. Rationale

Environmental and biological stresses, including those associated with unwise management of forests, postharvest losses and wastage, inadequate power supplies for rural needs, and inadequate incomes are major causes of hunger and malnutrition. Most improved technologies in agriculture permit improved productivity; will increase food supplies; and can help correct egregious patterns of food availability. In countries where agriculture is the dominant economic activity, the agriculture sector should provide sufficient and dependable supplies of nutritious food at affordable prices. Yet, agriculture, the key to development of most LDC economies, has been frequently a lagging sector. In Africa, agriculture output per capita has been declining steadily over the last two decades. According to the World Bank, food imports by LDCs have increased sixfold in the last 20 years.

Inadequate food supply and its concomitant, hunger and malnutrition, are not due to agricultural practices alone. General unfavorable conditions such as long periods of unfavorable climate and fragile soils deficient in plant nutrients have been exacerbated by long term inappropriate use of land. Disequilibrium between population and natural resources -- water and trees -- continues to increase; continues to aid and abet increases in the number of hungry or undernourished people; and continues to contribute to the unacceptable rates of economic activity. Long-term economic growth in developing countries depends on maintaining ecosystem processes and life-support systems such as soil regeneration and protection, recycling of nutrients, and cleansing of waters, all of which are needed for sustainable production of goods for human well-being. Forests, grazing lands, and aquatic environments provide the renewable biological materials for food and other basics for the prevention of hunger and malnutrition.

Agricultural production based on a well maintained natural biological and physical resource base is not the only factor in hunger alleviation. Poor people often lack the financial resources to meet minimum dietary needs. For such people, the hunger problem can only be solved by increasing their employment and incomes, and thereby increasing effective demand (purchasing power) to buy food. According to a recent World Bank report, lack of purchasing power may, in fact, be the most serious cause of the global hunger problem.

The Bureau for Science and Technology works to achieve, through basic research, applied research, collaborative research, and the provision of technical assistance, a lessening of worldwide hunger.

For purposes of presentation, our activities which have as their primary objective increased productivity and increased availability of food, are described in the hunger portion of this Action Plan. Selective activities addressing the effective demand side of the hunger equation, such as improvement of agricultural marketing channels are also found in this section. However, the bulk of activities targeted to effective demand by the Bureau for Science and Technology have been consolidated in the income portion of this paper. Virtually all of the Bureau's activities described in this Hunger Section also contribute to increased income objectives. Conversely, those agricultural activities described in the Income Section also have important food objectives.

I.2. Long Range Objectives to Lessen Hunger

Our long range objectives to lessen hunger are indexed below and are elaborated in the sections indicated.

- 1.3. Increase food availabilities, with emphasis on the development of improved technologies for plant and animal production. Specific objectives include:
 - 1.3.1. Develop high yielding varieties tolerant to stress
 - 1.3.2. Improve pest, weed and disease control
 - 1.3.3. Postharvest conservation
 - 1.3.4. Improved animal production
 - 1.3.5. Improved management of aquatic resources
 - 1.3.6. More effective technology transfer
 - 1.3.7. Promote consumption of nutritious food
 - 1.3.8. Strengthen policy dialogue
- 1.4. Effective management of natural resources to preserve and enhance the productive base upon which agriculture depends.
- 1.5. Develop appropriate technologies to provide adequate supplies of energy for home use and to sustain small and large farm production.
- 1.6. Stimulate employment generation and the promotion of small and medium private enterprises (see Income Section).
- 1.7. Improve access to rural credit and financial services through increased savings mobilization and strengthening of financial intermediaries (see Income Section)

I.3. Benchmarks for Attaining Production Objectives to Lessen Hunger

1.3.1. Develop Stress Tolerant Varieties

A major inhibitor to growth in food availability is the absence of high yielding, stress tolerant plants. The Bureau's strategy addresses the most universally common stresses. For FY 1987/1988, the stress benchmarks of the Bureau for Science and Technology are:

- Identify high yielding crop plant varieties that are tolerant to stress from salt, insects, diseases, weeds, and adverse climates.
- At least 2 percent more acreage of modern varieties of rice, sorghum, maize and cowpeas planted in seven countries during fiscal year FY 1987/1988 than was planted in fiscal year FY 1985/1986.
- Identify wheat, barley, maize, pigeon peas, and sweet potato varieties that are resistant to nematodes by FY 1988.
- Release eight stress tolerant varieties; two superior nitrogen fixing bean varieties; two drought tolerant peanut varieties; and one multi-disease resistant wheat variety by FY 1988.
- Release three salt-tolerant lines of wheat and sorghum in FY 1988.
- Wide crosses in both wheat and rice using domesticated and wild strains in search of drought resistance will have produced at least three new lines of promising material for wheat and rice by FY 1988.
- Aluminum tolerant varieties: two millet, three sorghum and three wheat released by FY 1988.

Projects Contributing to Attainment of Benchmark

- 0621 - Spring X Winter Wheat
 - 1254 - Sorghum/Millet CRSP
 - 1310 - Bean/Cowpea CRSP
 - 4048 - Peanut CRSP
 - 4136 - Special Constraints Research
 - 4137 - Biotechnology/Tissue Culture
 - 4141 - High Value Horticulture Crops
 - 4143 - R&D of Improved Seed Production and Utilization
 - 4176 - Improve Plant/Animal Tolerance to Stress
 - 5053 - HBCU Research Grants
 - 5058 - Joint Memoranda of Understanding/Agriculture
-

1.3.2. Improve Pest, Weed and Disease Control.

Food supplies are limited not only by an inadequate number of appropriate high yielding, stress tolerant varieties but also by losses and inefficiencies which occur during the production and harvesting cycles. Pests can decimate crops and harvests no matter how productive the variety planted. For FY 1987/1988, the Bureau's pest control benchmarks include:

- Initiate two regional network groups for integrated pest management in Southeast Asia. Complete one training course on weed management and one course on crop loss assessment in FY 1987.
- Conduct ten training programs in safe use of pesticides in six countries.
- Assess postharvest losses from vertebrate pests in at least six countries and conduct training courses on control procedures for LDC technical personnel in at least eight countries in FY 1987.

Projects Contributing to Attainment of Benchmark

- 4142 - Integrated Pest Management and Environmental Control including Biocontrol
 - 4173 - Vertebrate Pest Management Systems
-

1.3.3. Postharvest Conservation

Postharvest conservation of food products through efficient storage, processing, and marketing is essential to hunger reduction. The Bureau's postharvest conservation benchmarks for FY 1987/1988 are:

- Methodologies for drying grains on small farms and agribusiness enterprises selected. Seven-week grain storage and marketing course for 35 students completed in FY 1987.
- Technical assistance in three countries, to upgrade small food processing plants completed in FY 1987.
- Two host country workshops on preservation of perishables by solar drying conducted. Low technology solar cooling unit for testing identified by FY 1988.
- Regional networks, promoting research and exchange of information on postharvest conservation among West African agricultural researchers in six countries organized and functioning by FY 1987.

Projects Contributing to Attainment of Benchmark

1323 - Storage and Processing Fruits and Vegetables
4144 - Postharvest Grain Systems Research and Development
5058 - Joint Memoranda of Understanding - Agriculture
5313 - Small Farming Marketing Access

1.3.4. Improve Animal Production

To reduce hunger and improve diet, LDCs need reliable sources of animal protein. Animal diseases and other factors limit severely animal protein availability in A.I.D.'s client nations. The Bureau's benchmarks for quantitative increase of animal protein are:

- Increase the number of small farm families producing small ruminants in at least four countries.
- Increase the quality of animals and the care of small ruminants by farmers in four countries.
- A vaccine for rinderpest produced. Research on a vaccine for heart water anaplasmosis begun by FY 1988.
- Research for production of new vaccines to control three important diseases among cattle and sheep underway in FY 1988.
- Research to develop heat stable, reliable and long lasting animal vaccines started.
- An effective vaccine for Contagious Caprine Pleuropneumonia (CCPP) virus in goats produced and field tested by FY 1988.

Projects Contributing to Attainment of Benchmark

- 1328 - CRSP-Small Ruminants
 - 4083 - Host Resistance Integrated Tick Control
 - 4178 - Improved Animal Vaccines through Biotechnology
 - 5058 - Joint Memoranda of Understanding - Agriculture
-

1.3.5. Improve Management of Aquatic Resources.

Fish as a source of protein is important to the diet of many individuals, and in some instances, may be the only source of affordable animal protein. The Bureau's benchmarks for fish production, are:

- Four methods for assessing fish stock tested in Costa Rica and the Philippines by FY 1987.
- At least twelve LDC scientists educated in hydroacoustic techniques for fish stock assessment by FY 1987.
- Closed life-cycle reproduction techniques for fish in the Philippines, Indonesia, and Taiwan developed and tested by FY 1988.
- Present 7% annual rate of increase for aquacultural production in the world maintained. (FY 1986 production is 9.3 million metric tons)
- Achieve an annual rate of increase of 2% in capture fisheries landings by LDCs (LDC production in 1984 was 39 million metric tons).
- Integrated management strategy for protecting natural fisheries areas prepared. Research needs identified by FY 1987.

Projects Contributing to Attainment of Benchmark

- 0242 - Fisheries and Aquaculture Technical Assistance
 - 1314 - Aquaculture Technology Development
 - 4023 - CRSP Pond Dynamics
 - 4024 - Fisheries Development Support Services
 - 4111 - ICLARM
 - 4146 - CRSP Stock Assessment - Fish
 - 4161 - Reproductive Studies: Milkfish
-

1.3.6. More Effective Technology Transfer

Increasing agricultural productivity requires introduction of new and improved technologies for use on farm and in the processing and marketing of products. Identifying, transferring, and adapting these technologies for farmers and small entrepreneurs is more than a scientific or technical problem. Developing productive technologies that get used requires knowledge of the motivations and incentives faced by private individuals, men and women, and of the institutions and policies that create and sustain those incentives. S&T benchmarks for enhancing technology transfer include:

- Low-input technology, irrigation and energy, and guidelines for sustained use of crop land for use in four countries produced by FY 1988.
- Five hundred host country nationals educated in land-use planning, use of on-farm water management, and production marketing and extension of fertilizers by FY 1988.
- Six training manuals drafted for rapidly diagnosing constraints on systems for conducting on-farm tests of new technologies.
- Eight case studies completed highlighting the contribution of Farming Systems Research on technology development and transfer by FY 1988.
- Annotated references prepared for farming systems research literature; two training workshops in FSR conducted; case studies field tested for use in training by FY 1988.
- Instructional systems for transferring agricultural technology among farmers, researchers, and extension workers started in Honduras, Peru and probably Ecuador, in FY 1987, and in Indonesia and an African site in FY 1988.
- Eight replications of innovative elements of appropriate technology in agriculture (ATI generated activities) completed by FY 1988.
- In West Sumatra and Peru, apply the results of farming systems and continuous cropping research using low-input technology in FY 1987 and FY 1988.

Projects Contributing to Attainment of Benchmark

- 1282 - Title XII Strengthening Grants
 - 4099 - Farming Systems Support
 - 4109 - Agricultural Technology Research and Development
 - 4127 - Water Management Synthesis III
 - 5058 - Joint Memoranda of Understanding - Agriculture
 - 5428 - Appropriate Technology International II
 - 5438 - Development Strategies For Fragile Lands
 - 5826 - Communication for Technology Transfer in Agriculture
-

1.3.7. Promote Nutritious Food Consumption

Abatement of hunger demands attention not only to how much food is produced -- quantity -- but also what kinds of food are consumed -- quality. The absence of mechanisms for monitoring nutritional status of mothers and children in particular; the absence of means to fortify indigenous diets lacking in essential nutrients; and the absence of useful information about the nutritional benefits of diverse diets; have prompted the Bureau to select the following nutritional benchmarks in the effort to abate hunger.

- Technical assistance provided in three countries to demonstrate use of extrusion cookers underway by FY 1988.
- Technical assistance in the Philippines to fortify Monosodium Glutemate with vitamin A and in Egypt to fortify flour with iron underway by FY 1988.
- Generic standards for high-density weaning foods in the Camerouns, Peru, and six other countries produced and issued by FY 1988.
- Field trials on rice bran stabilization in the Philippines completed by FY 1988.
- Several new soy-based weaning and snack foods using extrusion cooking produced. At least four new processes for preparing soy foods in homes completed by FY 1988.
- Consumption of underutilized fish products -- shellfish, squid, sharks -- in two Asian and/or South Pacific countries increased by FY 1988.
- Pilot activity on consumption analysis in the Carribbean completed by FY 1988.
- Case studies of consumption/nutrition effects completed in three countries by FY 1988.

Projects Contributing to Attainment of Benchmark

- 0045 - Vitamin A Deficiency Program Support
 - 0262 - Scientific/Technical/Planning Support
 - 0831 - Nutrition and Food Technical Services
 - 1065 - Nutrition Education Field Support
 - 1309 - Functional Implication-Malnutrition CRSP
 - 4132 - Soybean Utilization and Research
-

1.3.8. Policy Objectives to Lessen Hunger

Although policy dialogue is a priority function of A.I.D. field Missions and others in direct contact with LDC governments, the Bureau for Science and Technology can and does provide research results and technical assistance to help Missions assess policy options and promote policy dialogue with LDC governments. For the Fiscal Year 1987/1988, the Bureau's policy dialogue benchmarks to lessen hunger are:

- Analytical services for use in agricultural policy dialogue in Sri Lanka, Madagascar, Togo, Egypt and Mali provided during FY 1987/1988.
- Ways to diminish policy constraints to technology transfer in agricultural production and marketing identified by FY 1988.
- Guidelines for assessing impact of economic policies on agricultural performance drafted in FY 1987.

Projects Contributing to Attainment of Benchmark

- 4053 - Market and Technology Access
 - 4084 - Agricultural Policy Analysis
 - 5510 - Consumption Analysis of Food and Agriculture Policy
-

I.4. Benchmarks for Attaining Natural Resources Objective to lessen hunger

1.4.1. Preserve the Productive Base Upon Which Agriculture Depends.

Deterioration of natural resources can be greatly reduced by appropriate management of resources at the local level. Conflicts frequently arise over use of land and water for food production, human consumption, and industrial development. Host countries will be helped to understand the affects of the various components of natural resource systems on economic growth, hunger and health. The Bureau's benchmarks for natural resources management for the Fiscal Years 1987/1988 are:

1.4.1.1. Soils

- Application of comprehensive soil classification system and use of crop simulation models to facilitate rapid transfer of agrotechnology for land use and crop production in progress in five countries.
- Short-cut methodology for agrotechnology transfer via minimum data set on soil and weather tested in Indonesia, Peru, Cameroon, Zambia, and Niger.
- Use of rhizobium inoculant for nitrogen fixation on legumes increased by 2% in FY 1987 and 4% in FY 1988: base year FY 1986.
- New chemical nitrogen fertilizer tested in ten or more of the following countries by FY 1988:

AFRICA: Botswana, Burundi, Cameroon, Kenya, Mali, Mauritania, Malawi, Niger, Rwanda, Senegal, Tanzania, Zambia, Zimbabwe.

ASIA: Bangladesh, Burma, India, Indonesia, Pakistan, Nepal, Philippines, Sri Lanka, South Pacific, Thailand.

LATIN AMERICA CARRIBBEAN: Belize, Bolivia,, Costa Rica, Dominican Republic, Guatemala, Haiti, Honduras, Jamaica, Peru.

NEAR EAST: Egypt, Jordan, Morocco, Tunisia.

- New biological nitrogen-fixing organism strains tested for effectiveness in two or more of the above countries in FY 1987.
- Packaging and marketing of chemical and biological nitrogen products evaluated in six countries in FY 1988.
- Sector assessment and management models for soil, water, and fertilizer completed for use in rainfed and irrigated areas in Indonesia, Thailand, Philippines, Niger, Burkina Faso, Zambia, Cameroon, Ecuador, Columbia, Mali, and Zimbabwe.
- Fragile lands field work started in LAC, two workshops conducted, both in FY 1987.

- Strategies for fragile lands identified for seven countries.
- New sulfur coated slow release nitrogen fertilizer tested on rice for increased efficiency in ten of the above listed countries during 1987.
- Test technologies in the semi-arid tropics, for such things as control of sandblight and improvement of forest-soil management in Niger and SAFGRAD countries by FY 1988.
- Assess the Semi-Arid Food Grains Research and Development network during FY 1988.
- Use new technology of soil amendment to make infertile acid tropical soils productive on a continuing basis in Indonesia, Peru and Niger in FY 1987 and FY 1988.
- Direct training of 300 fertilizer technicians (senior and middle level managers) in policy, planning, production, marketing, distribution, research and extension during 1987.
- Develop and evaluate indigenous fertilizer resources (phosphates and sulfur) for their exploitation and use in four countries during 1987.
- Fertilizer related technical assistance provided to approximately ten USAIDs during 1987.

1.4.1.2. Agroforestry

- Alley cropping systems using multipurpose tree species defined for selected areas in Thailand, Peru, Ecuador, Sri Lanka, India, and Indonesia and several countries in Africa initiated by FY 1988.
- The required mix of forests and crops for soil sustainability identified for selected areas in Thailand, Peru, Ecuador, Sri Lanka, Indonesia, India and several countries in Africa initiated by FY 1988.
- Agroforestry networks for research in subhumid bimodal highlands zones of Kenya, Rwanda, Burundi, and Uganda installed.
- Workshops in the inventory of land resources and data interpretation held in 4 countries for a total of 60 participants.

1.4.1.3. Water

- Efficiency in irrigation systems -- on farm management for crop production -- increased by 3% in FY 1987 and 6% in FY 1988: base year FY 1986.
- River basin/watershed/management guidelines produced in FY 1987.
- Regional network, promoting exchange of information among West African agriculture researchers functioning.
- Host country nationals trained in natural resources management programs in FY 1987 and in FY 1988.

Projects Contributing to Attainment of Benchmarks

- 0054 - International Fertilizer Development Center
 - 0610 - Biotechnology: Limiting Factors in BNF
 - 0613 - Symbiotic Nitrogen Fixation (NIFTAL)
 - 1096 - Field Services and Program Development
 - 1155 - Human Settlements and Natural Resources Systems Analysis
 - 1229 - Soil Management Support Services
 - 1311 - CRSP Soil Management
 - 4021 - Technology of Soil Moisture Management
 - 4054 - International Benchmark Sites Network
 - 4109 - Agricultural Technology Research and Development
 - 4111 - International Board for Soil Research & Management
 - 4111 - International Irrigation Management Institute
 - 4127 - Water Management Synthesis II
 - 4142 - IPM and Environmental Protection Including Biocontrol
 - 4177 - Improved BNF through Biotechnology
 - 4179 - Irrigation Management Support & Research
 - 5058 - Joint Memoranda of Understanding - Agriculture
 - 5301 - Research on Access to Land, Water and Natural Resources
 - 5438 - Development Strategies for Fragile Lands
 - 5517 - Environmental Planning and Management
 - 5519 - Forest Resources Management
 - 5547 - Forestry Fuelwood Research and Development
 - 5550 - Biological Conservation in Development
 - 5728 - Energy Policy Development and Conservation
 - 5730 - Renewable Energy Application and Training
-

I.5. Benchmarks for attaining Energy objectives to lessen hunger.

1.5.1. Energy technologies to provide adequate supplies of energy to sustain small and large farm production. According to the FAO, each increase of 1% in agricultural output requires an additional energy input of more than 2%. The intent to increase agricultural growth by a minimum 2% by FY 1988 requires substantial attention to energy use, constraints and production. The Bureau's energy benchmarks are:

- Working with Regional Bureaus and Missions, integrate renewable energy into agricultural and rural development projects during FY 1987 and FY 1988.
- Assessments of energy requirements associated with groundwater pumping for irrigation in Asia -- probably Pakistan and India. Pumping needs assessments in Africa: Zimbabwe, Somalia, and Mali completed by FY 1987.
- One sugar cane plant producing locally derived power under construction in FY 1987; feasibility studies for use of cane as a power producer completed in the Philippines and Thailand in FY 1987; and project design for use of cane for power in a yet to be determined country in FY 1988.
- Four decentralized energy systems using either cane, rice hulls, other local biomass or fossil fuels, to substitute for costly imported fuels operating in India, the Philippines, Jamaica and probably Costa Rica.
- Assessment of rice hulls to generate power for agriculture and rural use completed by FY 1988.
- Teams in place to promote U.S. and LDC private sector investment in small power systems, energy conservation and cogeneration in Pakistan, India, Thailand in FY 1987 and two more countries in FY 1988.
- Five model energy conservation programs for agricultural industries (including private sector industries) underway in Pakistan, Thailand, and Egypt by FY 1988.
- Study of energy needs for irrigation in Niger, Malawi, and India completed in FY 1987.

Projects Contributing to Attainment of Benchmark

- 5702 - Energy Technical Service Support
- 5709 - Bioenergy Systems and Technology
- 5724 - Conventional Energy Technical Assistance
- 5728 - Energy Policy Development and Conservation
- 5730 - Renewable Energy Applications and Training
- 5731 - Energy for Agriculture
- 9997 - Manpower and Energy Training

1.6. Stimulate employment generation and the promotion of small and medium private enterprises (see Income Section).

I.7.1. New Projects

936-xxxx - Energy for Agriculture

Energy is critical to agriculture. Estimates suggests that energy use for agricultural production must grow by over 7% annually. Several energy for agricultural use activities are in training. Conceptualizing the integration of energy and agricultural programs, especially for irrigation purposes, is currently in process. The Bureau expects that by FY 1988, concepts will have matured to the point of readiness for collaborative implementation.

The objectives of Energy for Agriculture project are to: obtain and disseminate information on appropriate energy systems to meet irrigation needs; provide technical support to missions to establish approved irrigation systems and promote appropriate policies; and provide training to strengthen foreign national capabilities to manage and implement irrigation systems, especially testing, operating, and maintaining pump systems.

The new project is planned as a two phased activity. Phase I will be a collaborative effort with A.I.D. offices and missions to evaluate a range of power systems for use in irrigation and water supply. Phase II is expected to include agro-processing and rural industries.

936-4179 - Irrigation Management Support and Research

The goal of the proposed Irrigation Management Support and Research Project is to bring about improved LDC irrigation system performance, including increased productivity of the irrigated agricultural subsector, through better water management and more effective use of water resources. Its more immediate aim is to increase the capability of AID-recipient countries in Africa and Latin America/Caribbean to address constraints to achieving these objectives, and it will be pursued through a two-pronged strategy of direct field support to Missions and host governments as well as a longer-term program of research and broader sector support.

The former will focus on technical assistance in designing, developing, monitoring and evaluating AID-funded efforts in irrigation and water management and the training of host-country nationals through in-country short courses, workshops, and the development of training aids and materials. Besides applied research into a wide variety of problems facing improved irrigation system performance, the latter component of the project will also facilitate technology transfer and other actions that will stimulate the adoption of sound irrigation practices at both the farm level and by those responsible for irrigation systems operations and management.

936-5111 - Establishing Nutritional Surveillance

The Agency Strategic Plan sets forth specific benchmarks for overcoming both hunger and health deficiencies. In order to monitor progress toward the achievement of targets, developing countries need to establish systems for data collection and analysis at local, intermediate and national levels. This project will build on the achievements and lessons of the predecessor "Surveys and Surveillance" project to further develop and adapt prototype in-country data systems utilizing economic, public health, weather and related information. The project will also train host country specialists in the technology of data collection, analysis and interpretation. Beyond this, the project will establish information-sharing networks, or strengthen those already in existence. Project outputs will provide developing country decision makers with early warning of potentially severe malnutrition, and otherwise provide a base for improved food and nutrition policy making.

HUNGER

RANK	OFFICE	PROJECT/APPROP	TITLE	FY 88	CUMULATIVE
1	ST/AGR	9311254 FNG	CRSP: SORGHUM/MILLET	2800	2800
2	ST/AGR	9364111 FNG	INT AGRICULTURAL RESEARCH CENTERS	860	3660
3	ST/AGR	9311311 FNG	CRSP-PROGRAM: SOILS MANAGEMENT	1750	5410
4	ST/AGR	9364179 FNG	IRRIGATION MGT SUPPORT AND RESEARCH	960	6370
5	ST/AGR	9311310 FNG	CRSP: BEANS AND COWPEAS	4000	10370
6	ST/AGR	9311328 FNG	CRSP-PROGRAM: SMALL RUMINANTS	2100	12470
7	ST/AGR	9311229 FNG	SOIL MANAGEMENT SUPPORT SERVICE	780	13250
8	ST/RD	9365438 FNG	DEVEL. STRATEGIES FOR FRAGILE LANDS	900	14150
9	ST/ED	9365826 FNG	COMMUNICATION FOR TECH TRANSFER IN AGR.	870	15020
10	ST/ED	9365826 EHG	COMMUNICATION FOR TECH TRANSFER IN AGR.	100	15120
11	ST/EY	9365728 FNG	ENERGY POLICY DEV AND CONSERVATION	450	15570
12	ST/FNR	9365519 FNG	FOREST RESOURCES MANAGEMENT	630	16200
13	ST/N	9310262 FNG	NUTRITION: SCIENTIFIC/TECH/PLNG SUPPORT	900	17100
14	ST/RUR	9365058 FNG	JOINT MOUS-AGRICULTURE	3500	20600
15	ST/AGR	9310610 FNG	BIO-TECHNOLOGY LIMITING FACTORS	325	20925
16	ST/AGR	9364137 FNG	BIOTECHNOLOGY TISSUE CULTURE	1355	22280
17	ST/AGR	9364084 FNG	AGRICULTURAL PLANNING AND POLICY ANALYSI	1050	23330
18	ST/AGR	9364048 FNG	CRSP - PEANUTS	2170	25500
19	ST/EY	9365735 FNG	ENERGY FOR AGRICULTURE	500	26000
20	ST/RD	9365315 FNG	EXP. APPROACHES TO RURAL SAVINGS	718	26718
21	ST/RUR	9365053 FNG	HBCU RESEARCH GRANTS	2000	28718
22	ST/FNR	9365550 FNG	BIOLOGICAL CONSERVATION IN DEVELOPMENT	1225	29943
23	ST/AGR	9364178 FNG	IMPROVED ANIMAL VACCINE THRU BIO-TECH.	850	30793
24	ST/AGR	9364176 FNG	IMP PLANT/ANIMAL TOLERANCE TO STRESS	1000	31793
25	ST/AGR	9364136 FNG	SPECIAL CONSTRAINT RESEARCH	2085	33878
26	ST/AGR	9310054 FNG	INTL FERTILIZER DEVELOPMENT CENTER	2400	36278
27	ST/RD	9365301 FNG	RSCH ON ACCESS TO LAND,WATER/NATURAL RES	450	36728
28	ST/AGR	9364109 FNG	AGRICULTURAL TECHNOLOGY RES + DEVELOPMEN	1260	37988
29	ST/EY	9365709 FNG	BIOENERGY SYSTEMS AND TECHNOLOGY	500	38488
30	ST/RD	9311135 FNG	HUMAN SETTLEMENTS AND NAT RES SYS ANALY	490	38978
31	ST/AGR	9364177 FNG	IMPROVED BNF THRU BIO-TECHNOLOGY	600	39578
32	ST/AGR	9364021 FNG	TECHNOLOGY OF SOIL MOISTURE MANAGEMENT	520	40098
33	ST/AGR	9364054 FNG	INTERNATIONAL BENCHMARK SITES NETWORK	550	40648
34	ST/AGR	9364144 FNG	POSTHARVEST GRAIN SYS/AGRIBUSINESS R+D	560	41208
35	ST/FNR	9365547 FNG	FORESTRY FUELWOOD RES. AND DEVEL.	375	41583
36	ST/N	9311065 FNG	NUTRITION: EDUCATION FIELD SUPPORT	550	42133
37	ST/PO	9361406 FNG	PROGRAM DEVELOPMENT AND SUPPORT	1000	43133
38	ST/RD	9365313 FNG	SMALL FARMER MARKETING ACCESS	600	43733
39	ST/RUR	9365055 FNG	TECHNICAL ADVISORY SUPPORT SERVICES	260	43993
40	ST/AGR	9364143 FNG	R+D OF IMP SEED PROD/UTILIZATION IN LDCS	500	44493
41	ST/AGR	9311323 FNG	STORAGE AND PROCSSG OF FRUITS AND VEGS	450	44943
42	ST/RD	9311096 FNG	FIELD SERVICES AND PROGRAM DEVELOPMENT	550	45493
43	ST/RUR	9311282 FNG	TITLE XII STRENGTHENING GRANTS	2240	47733
44	ST/AGR	9364142 FNG	IPM AND ENVIRON PROT INCL BIO-CONTROL	720	48453
45	ST/AGR	9310621 FNG	SPRING X WINTER WHEAT	400	48853
46	ST/EY	9365730 FNG	RENEWABLE ENERGY APPLICATION/TRAINING	450	49303
47	ST/AGR	9364132 FNG	SOYBEAN UTILIZATION AND RESEARCH	490	49793
48	ST/FNR	9365517 SDG	ENVIRONMENTAL PLANNING AND MANAGEMENT	348	50141
48	ST/AGR	9364173 FNG	VERTEBRATE PEST MANAGEMENT SYSTEMS R&D	400	50541
50	ST/RD	936582650FNG	COMM FOR TECHNOLOGY TRANSFER IN AGRIC	300	50841

2

S&T FY 88 PROGRAM BY KEY PROBLEM AREA

51	ST/AGR	9311314	FNG	AQUACULTURE TECHNOLOGY DEVELOPMENT	170	51011
52	ST/N	9310831	FNG	NUTRITION AND FOOD TECHNICAL SERVICES	600	51611
53	ST/EY	9369997	SDG	MANPOWER AND ENERGY TRAINING	500	52111
54	ST/AGR	9310242	FNG	FISHERIES-AQUACULTURE TECH. ASST.	140	52251
55	ST/RD	936554750	FNG	FORESTRY/FUELWOOD RES/DEV (F/FRED)	336	52587
56	ST/EY	9365724	SDG	CONVENTIONAL ENERGY TECHNICAL ASST	300	52887
57	ST/RD	936412750	FNG	WATER MGT SYNTHESIS II	200	53087
58	ST/FNR	9365518	FNG	COASTAL RESOURCES MANAGEMENT	660	53747
59	ST/N	9365110	FNG	CONSUMPTN ANALYSIS OF FOOD & AG POLICIES	800	54547
60	ST/AGR	9364141	FNG	HIGH VALUE HORTICULTURE CROPS	440	54987
61	ST/AGR	9364023	FNG	CRSP - POND DYNAMICS	520	55507
62	ST/AGR	9364146	FNG	CRSP: FISHERIES/STOCK ASSESSMENT RSCH	400	55907
63	ST/RUR	9365052	SDG	PROJECT REVIEW	0	55907
64	ST/AGR	9364024	FNG	FISHERIES DEVELOPMENT SUPPORT SERVICES	130	56037
65	ST/AGR	9364161	FNG	REPRODUCTIVE STUDIES ON MILKFISH	240	56277

II. Plan to Address Problem of Inadequate Income Growth

II.1. Rationale

A prevailing condition in A.I.D.'s client countries is the existence of sizable unemployment or underemployment. This underutilization and misallocation of human resources may take many forms, from open unemployment -- as in seasonal unemployment which affects especially surplus agricultural workers -- to "disguised" unemployment, where, for example, a work process that could be performed by two persons is in fact performed by three or more. Whether disguised or hidden, underemployment of human resources is frequent, onerous, and in economic terms, costly. The result of underemployment and unemployment -- real, seasonal, disguised or hidden -- is lack of income. Absence of income impacts across the spectrum of basic needs.

Poor policies and misdirected investments are major causes of low employment growth. Low productivity of workers is a fundamental cause of low earnings. Whereas some former A.I.D. clients have escaped the worst symptoms of poverty, (e.g., Korea, Taiwan, Malasia, Chile and Brazil) poverty has worsened among many other A.I.D. clients. Poverty has worsened not only because of prolonged recession but also because of incipient structural weaknesses in policy compounded by poor administration of weak policies and the absence of both a stable labor market and a qualified labor force.

Women constitute a major and frequently inefficiently-used group in rural and urban income producing sectors. For centuries women have been virtually ignored as earners of real income by both the public and private sectors. Yet women as a group have been and continue to be major earners of invisible income. In Africa, for example, while village men often have gone to the urban areas in search of work, women are left to till the fields, carry the water, prepare the food, search for fuel, and tend the children. Often women constitute the most reliable source of income among poor rural and urban families in maturing countries.

Experience and exposure teaches that countries which have over-extended the role of the public sector and restricted the operation of the private sector have had slow growth, heavy budget deficits and rising debt burdens. A climate conducive to private sector activity among A.I.D.'s client nations is now emerging. If A.I.D. is to succeed in promoting economic growth and its corollary, growth in income, the Agency should take advantage of the new environment permitting fuller participation of the private sector in seeking ways and means to stimulate equitable growth in family income.

II.2. Long Range Objectives to Achieve Growth in Income

- 2.3. Increase off-farm employment opportunities, income growth and productivity.
- 2.4. Improve LDC capability to finance and manage development activities at the local level.
- 2.5. Enhance rural income growth through sustainable agricultural production.
- 2.6. Improve management of natural resource base for economic growth.
- 2.7. Develop less expensive energy systems to spur economic growth and reduce LDC dependence on imported fuels.

II.3. Benchmarks for Attaining Off-farm Employment objectives to Achieve Growth in Income

- 2.3.1. Labor forces in LDCs are growing disproportionately to opportunities in the labor market. The absence of productive jobs in rural areas especially results in depressed rural incomes and internal migration to cities, which further exacerbates urban employment problems. The Bureau's strategy assigns high priority to activities designed to overcome inadequate income through employment and enterprise development. For the FY 1987/1988 year, employment/micro - and small scale enterprise benchmarks include:
 - Facilitate policy dialogue to remove biases against labor-intensive and small-scale enterprises (Rwanda, Bangladesh, Thailand, Dominican Republic, Indonesia) by FY 1988.
 - Case studies to galvanize self-employment and corresponding training modules in El Salvador, Bangladesh and Philippines completed by FY 1988.
 - Two research documents on self-employment and micro-enterprise promotion published in FY 1988.
 - Replication of employment generation activities sponsored by Appropriate Technology International in process by FY 1987.
 - Programs to stimulate collaborative business ventures established in Costa Rica, Thailand, Tunisia, Turkey, Yemen, India, and Indonesia in FY 1987 (six ventures in each country); one each probably in Morocco and Jordan, in FY 1988.

Projects Contributing to Attainment of Benchmarks

- 1090 - Small Enterprise Approaches to Employment
 - 4053 - Market and Technology Access
 - 5426 - Employment and Enterprise Policy Analysis
 - 5428 - Appropriate Technology International
-

II.4. Benchmarks For Improving Capability to Finance and Manage Development at Local Level

- 2.4.1. Overcoming financial instability is critical to income growth. S&T's long term objective in this area is to improve the capacity of the Agency and of developing countries to (a) increase capacity at the local level to generate revenues, mobilize savings, and stimulate economic development, and (b) reduce the burden of central governments.
- A contract for applied research/technical assistance for the implementation of a systematic field analysis to mobilize actions to efficiently sustain recurrent costs of local infrastructure - completed in FY 1987.
 - Implementation of the above contract begins in El Salvador and possibly the Philippines, Bangladesh, and Honduras in FY 1988.
 - Findings on local revenue generation obtained from prior years' assessments published in FY 1988.
 - Expand current programs of support to savings mobilization (prevent return to targeted subsidies) in rural financial institutions, to include Dominican Republic, Bangladesh, the Philippines and Niger (FY 1987) and possibly Indonesia and Guatemala in FY 1988.
 - Expand pilot savings program in Dominican Republic in years FY 1987 and FY 1988.
 - Expand program to achieve market rates for interest (loans and deposits) and reserved rates in Bangladesh during FY 1987 and FY 1988.
 - Complete survey of informal savings systems and their relationship to the formal rural financial system (transaction costs and incentive structure) in Niger by FY 1987.
 - Analyze urban and rural capital mandates to assure appropriate incentives for the mobilization and utilization of capital, consistent with private sector efficiency (Rwanda, Bangladesh).
 - Improve the financial and business management of indigenous institutions, including appropriate training, in Egypt, Bangladesh, India, Indonesia, Pakistan, Philippines, Dominican Republic, Ecuador, Haiti, Paraguay, Benin, Central African Republic, Chad, Guinea, Malawi, Niger, Swaziland, Togo, Zambia, Zimbabwe.

Projects Contributing to Attainment of Benchmark

- 5315 - Experimental Approaches to Rural Savings
 - 5317 - Performance Management
 - 5426 - Employment and Enterprise Policy Analysis
 - xxxx - Decentralization: Finance and Management (New Project)
-

2.5. Benchmarks for Enhancing Rural Income Growth Through Sustainable Agricultural Production

2.5.1. A strong agriculture sector provides productive employment either directly through family farms or indirectly through opportunities generated through forward and backward demand linkages with the non-farm sector. All S&T agricultural Technology projects included in the Hunger Section of the Action Plan also contribute importantly to the income objective. The FY 1987/1988 benchmarks for increased income from sustainable agricultural production include:

- Increase food availability through the development of improved technologies for plant and animal production by FY 1988.
- Use renewable sources of power (solar, wind and geothermal) to sustain specific agricultural production in selected countries by FY 1988.
- Establish programs and identify investments needed to relieve problems of energy for agricultural production by FY 1988.
- Techniques for increases in fish production in process in Costa Rica, Indonesia, and the Philippines in FY 1988.
- Provide training for 12 LDC scientists in hydroacoustic techniques for stock assessment in FY 1988.
- Test pond productivity models in the Philippines, Indonesia and Taiwan by FY 1988.
- Continue providing technical assistance for cultured and captured fish production.
- Decrease fisheries post harvest losses by 2% by FY 1988.
- Increase by 2% production of high value horticulture crops by FY 1988.

<u>Projects Contributing to Attainment of Benchmarks</u>	<u>%</u> <u>Hunger</u>	<u>%</u> <u>Income</u>
0054 - Intl Fertilizer Development Center	60	40
0242 - Fisheries-Aquaculture Tech. Asst.	40	60
0610 - Bio-Technology Limiting Factors	65	35
1229 - Soil Management Support Services	65	35
1254 - CRSP: Sorghum/Millet	70	30
1311 - CRSP-Program: Soils Management	50	50
1314 - Aquaculture Technology Development	40	60
1323 - Storage and Procsg of Fruits and Veggies	60	40
1328 - CRSP-Program: Small Ruminants	50	50
4021 - Technology of Soil Moisture Management	65	35
4023 - CRSP - Pond Dynamics	40	60
4024 - Fisheries Development Support Services	40	60
4048 - CRSP - Peanuts	70	30
4054 - International Benchmark Sites Network	50	50
4084 - Agricultural Planning and Policy Analysis	70	30
4109 - Agricultural Technology Res & Development	70	30
4111 - Int Agriculturall Research Centers	40	60
4132 - Soybean Utilization and Research	70	30
4137 - Biotechnology Tissue Culture	65	35
4140 - CRSP: Fisheries/Stock Assessment Research	40	60
4141 - High Value Hotriculture Crops	55	45
4142 - Imp and Environ Prot Incl Bio-Control	90	10
4144 - Postharvest Grain Sys/Agricusiness R&D	80	20
4161 - Reproductive Studieson Milkfish	40	60
4177 - Improved BNF Thru Bio-Technology	50	50
4178 - Improved Animal Vaccine Thru PIO-Tech	50	50
4179 - Irrigation Mgt Support and Research	60	40
5728 - Energy Policy Development and Conservation		
5730 - Renewable Energy Application and Training		

II.6. Benchmarks for Increased Economic Growth Through Improved Management of Natural Resource Base

2.6.1. Growth and income depend, among other things, on maintaining ecosystem processes and life-support systems such as soil generation, nutrient recycling, water cleansing, and renewable biological materials. Increased incomes are directly achievable by more intensive scale planting of productive multi-purpose trees and farm lands. The Bureau's natural resources/forestry benchmarks are:

- Increase in income by 10% from charcoal and timber sales in Thailand, Nepal, India and other countries in Southeast Asia by FY 1988.
- Increase in small farmer income from efficient management of wood lots in Ecuador in FY 1988.
- Efficient management of commercial wood lots by selected private sector entities in Ecuador in FY 1988.
- Coastal resources management initiated in Sri Lanka, Ecuador and Thailand in FY 1987.
- Alley cropping systems using multipurpose tree species defined for selected areas in Thailand, Peru, Ecuador, Sri Lanka, India and Indonesia by FY 1988.
- Coastal resources in Sri Lanka, Ecuador and Thailand, initiated by FY 1988.
- Analysis of the management of coastal lagoons in Sri Lanka initiated in FY 1987.
- Third pilot coastal resources management activity for fisheries in Thailand planned by FY 1987.

Projects Contributing to Attainment of Benchmarks

- 4024 - Fisheries Development Support Services
 - 5518 - Coastal Resources Management
 - 5519 - Forest Resources Management
 - 5547 - Forestry Fuelwood Research and Development
-

II.7. Benchmarks to Reduce Dependence on Imported Fuels

2.7.1 The A.I.D. target to achieve a 2% real increase in per capita income requires, among other things, reduction in dependence on imported fuels, an increase in use of indigenous fuels for power and considerable strides in energy conservation. Our energy benchmarks as concerns growth in income are:

- Technology teams to promote U.S. and LDC private sector investment in small power systems fielded in FY 1987 and additional teams in FY 1988.
- Assess policy barriers as these relate to private investment in energy conservation and power generation. Assessments completed in Pakistan, India and Thailand in FY 1987; three additional country assessments completed in FY 1988.
- Model energy conservation programs for industries (especially agricultural industries) in place in five countries by FY 1987 and 10 countries by FY 1988.
- Feasibility studies completed for a cane fired power plant in Jamaica in FY 1987.
- Begin feasibility study for cane fired power plants in Thailand and Honduras in FY 1987.
- Feasibility study of direct combustion of oil shale completed in Jordan in FY 1987, in collaboration with private sector entity.
- Approximately 150 host country nationals trained in industrial and utility energy conservation by FY 1988.
- Promote investment in indigenous oil exploration and development by FY 1988.
- Promote energy planning, management, and use of decentralized power systems using renewable and conventional technologies by FY 1988.
- Assessments of energy requirements associated with groundwater pumping in four African countries and in Pakistan and India in FY 1987.
- Examine the feasibility of straw and rice hull fired rural power plants, as substitutes for imported oil including diesel. If positive, initiate project in India or Thailand in FY 1987.

Projects Contributing to Attainment of Benchmarks

- 5702 - Energy Technical Service Support
 - 5709 - Bioenergy Systems and Technology
 - 5724 - Conventional Energy Technical Assistance
 - 5730 - Renewable Energy Application/Training
 - 9997 - Conventional Energy Training
-

II.8. Benchmarks for Attaining Policy Objectives to Redress Inadequate Growth in Income

Policy Dialogue

Among the more important policy issues of interest to A.I.D. in the context of growth in income are those concerning internal mobilization of financial resources, the privatization of parastatals, factor and product market price distortions, foreign trade and exchange distortions, subsidies, inefficient use of energy and incentives for expanding output. Our growth in income policy benchmarks for FY 1987/1988 therefore, are:

- Provide technical assistance to field missions requesting policy analysis of country specific employment and enterprise issues.
- Provide technical assistance to help change policies which decapitalize rural savings institutions. Use technical experts to demonstrate ways to strengthen private savings institutions and credit markets to benefit rural producers.
- Provide technical assistance to improve local and national revenue systems to meet recurrent costs of development projects.
- Provide technical assistance to encourage private sector growth.
- Publish findings (S&T Technical Series book on the A.I.D. experience) on savings mobilization and credit.
- Provide technical assistance to improve LDC analytical skills for assessing the impact of policies on the agriculture sector.
- Provide technical assistance for the effective management of water, land, and vegetation to Andean countries.
- Options for energy pricing in (Need Names of Countries).
- Analysis of policies governing electric power generation to promote private power generation in (Need Names of Countries) in FY 1987.
- Assess institutional and policy barriers as related to energy conservation in (Need Names of Countries).

Projects Contributing to the Attainment of Benchmarks

- 5426 - Employment and Enterprise Policy Analysis
 - 4084 - Agricultural Planning and Policy Analysis
 - 5517 - Environmental Planning and Management
 - 5110 - Consumption Analysis of Food and Agriculture Policies
 - 5728 - Energy Policy Development and Conservation
 - 1090 - Small Enterprise Approaches to Employment
 - 5315 - Experimental Approaches to Rural Savings Mobilization
 - 5317 - Performance Management
 - 5303 - Decentralization: Finance and Management
 - 5438 - Development Strategies for Fragile Lands
-

S&T FY 88 PROGRAM BY KEY PROBLEM AREA

RANK	OFFICE	PROJECT/APPROP	TITLE	FY 88	CUMULATIVE	
INADEQUATE INCOME GROWTH						
1	ST/RD	9365426	FNG	EMPLOYMENT AND ENTERPRISE POLICY ANALYSI	650	650
2	ST/RD	9365426	SDG	EMPLOYMENT AND ENTERPRISE POLICY ANALYSI	250	900
3	ST/AGR	9364084	FNG	AGRICULTURAL PLANNING AND POLICY ANALYSI	450	1350
4	ST/EY	9365728	SDG	ENERGY POLICY DEV AND CONSERVATION	1350	2700
5	ST/FNR	9365519	FNG	FOREST RESOURCES MANAGEMENT	1470	4170
6	ST/EY	9365724	SDG	CONVENTIONAL ENERGY TECHNICAL ASST	900	5070
7	ST/AGR	9311254	FNG	CRSP: SORGHUM/MILLET	1200	6270
8	ST/AGR	9364048	FNG	CRSP - PEANUTS	930	7200
9	ST/AGR	9310054	FNG	INTL FERTILIZER DEVELOPMENT CENTER	1600	8800
10	ST/AGR	9364109	FNG	AGRICULTURAL TECHNOLOGY RES + DEVELOPMEN	540	9340
11	ST/RD	9311090	FNG	SMALL ENTERPRISE APPROCHES TO EMPLOYMENT	350	9690
12	ST/RD	9311090	SDG	SMALL ENTERPRISE APPROCHES TO EMPLOYMENT	350	10040
13	ST/AGR	9364177	FNG	IMPROVED BNF THRU BIO-TECHNOLOGY	600	10640
14	ST/AGR	9364021	FNG	TECHNOLOGY OF SOIL MOISTURE MANAGEMENT	280	10920
15	ST/AGR	9364054	FNG	INTERNATIONAL BENCHMARK SITES NETWORK	550	11470
16	ST/EY	9365709	FNG	BIOENERGY SYSTEMS AND TECHNOLOGY	500	11970
17	ST/FNR	9365517	SDG	ENVIRONMENTAL PLANNING AND MANAGEMENT	875	12845
18	ST/AGR	9311311	FNG	CRSP-PROGRAM: SOILS MANAGEMENT	1750	14595
19	ST/AGR	9311328	FNG	CRSP-PROGRAM: SMALL RUMINANTS	2100	16695
20	ST/RD	9365303	FNG	LOCAL REVENUE GENERATION AND ADMINISTRAT	975	17670
21	ST/AGR	9311314	FNG	AQUACULTURE TECHNOLOGY DEVELOPMENT	255	17925
22	ST/AGR	9310242	FNG	FISHERIES-AQUACULTURE TECH. ASST.	210	18135
23	ST/AGR	9311323	FNG	STORAGE AND PROCSSG OF FRUITS AND VEGS	300	18435
24	ST/PO	9361406	SDG	PROGRAM DEVELOPMENT AND SUPPORT	1000	19435
25	ST/FNR	9365547	FNG	FORESTRY FUELWOOD RES. AND DEVEL.	2275	21710
26	ST/EY	9365730	FNG	RENEWABLE ENERGY APPLICATION/TRAINING	350	22060
27	ST/AGR	9364141	FNG	HIGH VALUE HORTICULTURE CROPS	360	22420
28	ST/AGR	9364023	FNG	CRSP - POND DYNAMICS	780	23200
29	ST/AGR	9364146	FNG	CRSP: FISHERIES/STOCK ASSESSMENT RSCH	600	23800
30	ST/RD	9365317	FNG	PERFORMANCE MANAGEMENT	746	24546
31	ST/AGR	9364132	FNG	SOYBEAN UTILIZATION AND RESEARCH	210	24756
32	ST/AGR	9364144	FNG	POSTHARVEST GRAIN SYS/AGRIBUSINESS R+D	140	24896
33	ST/AGR	9364142	FNG	IPM AND ENVIRON PROT INCL BIO-CONTROL	80	24976
34	ST/AGR	9364111	FNG	INT AGRICULTURAL RESEARCH CENTERS	1290	26266
35	ST/AGR	9364179	FNG	IRRIGATION MGT SUPPORT AND RESEARCH	640	26906
36	ST/EY	9369997	SDG	MANPOWER AND ENERGY TRAINING	1100	28006
37	ST/RD	9365317	EHG	PERFORMANCE MANAGEMENT	250	28256
38	ST/PO	9365054	FNG	INFORMATION TRANSFER	700	28956
39	ST/FNR	9365550	FNG	BIOLOGICAL CONSERVATION IN DEVELOPMENT	232	29188
40	ST/AGR	9311229	FNG	SOIL MANAGEMENT SUPPORT SERVICE	420	29608
41	ST/AGR	9364178	FNG	IMPROVED ANIMAL VACCINE THRU BIO-TECH.	850	30458
42	ST/PO	9361430	FNG	COMMUNICATIONS FOR FIELD SUPPORT	800	31258
43	ST/RD	9364053	FNG	MARKET AND TECHNOLOGY ACCESS	635	31893
44	ST/FNR	9365518	FNG	COASTAL RESOURCES MANAGEMENT	440	32333
45	ST/EY	9365702	SDG	ENERGY TECHNICAL SERVICE SUPPORT	100	32433
46	ST/AGR	9310610	FNG	BIO-TECHNOLOGY LIMITING FACTORS	175	32608
47	ST/AGR	9364137	FNG	BIOTECHNOLOGY TISSUE CULTURE	730	33338
48	ST/AGR	9364024	FNG	FISHERIES DEVELOPMENT SUPPORT SERVICES	195	33533
49	ST/AGR	9364161	FNG	REPRODUCTIVE STUDIES ON MILKFISH	360	33893
50	ST/RD	9365428	FNG	APPROPRIATE TECHNOLOGY INTERNATIONAL II	2250	36143

III. Plan to Reduce Illiteracy and Improve Education

III.1. Rationale

The lack of basic education and skills training at all levels impedes productivity and technological advances, lessens the chances for improvements in health, nutrition family planning and agricultural productivity and exacerbates the problem of unemployment. Development programs will not succeed without a literate population and skilled workforce to implement them.

Developing countries are struggling with the need to educate increasing numbers of children when education budgets are severely constrained. Existing education programs, whether at the primary school or university level, are frequently low quality and do not contribute fully to the country's major development efforts. In all sectors, the difficulties of reaching isolated and dispersed populations are hindering attempts to provide essential information and education about key development programs.

To respond to these critical education problems, the Science and Technology Bureau focuses on:

analysis and planning to make the best use of scarce financial and human resources;

introducing and adapting technology to improve the quality of education and to extend it to large, dispersed populations;

solving key education problems in other development sectors, and ensuring that Agency programs benefit from new advances in communications technology.

III.2. Long Range Objectives to Reduce Illiteracy and Improve Education

- 3.3. Increase the pool of basic, professional and technically educated people in A.I.D.'s client nations.
- 3.4. Develop analytic methodologies for informed education decision-making with emphasis on the efficient use of human and fiscal resources.
- 3.5. Develop adaptable technologies enabling countries to educate better, more people.

III.3. Benchmarks for Attaining Reduction in Illiteracy and Improvement in Education

3.3.1 Increase Pool of Educated People

Literate, professional and technically educated people are essential to both the efficient functioning of the national economy and to the ease with which a reasonable standard of living may be acquired. To this end, the Bureau's benchmarks to increase the numbers of appropriately educated people are:

- Provide specialized skills, training and academic education for approximately 18,000 foreign nationals in FY 1987 and a like number in FY 1988 in:
 - agricultural, professional and technical (app. 30%)
 - industry and energy (app. 24%)
 - public administration (18%)
 - health and family planning (app. 15%)
 - other (app. 13%)
- Of the above Agency total, 1,000 participants to be trained in conjunction with S&T program activities.
- Increase professional education opportunities and skills training for women from 20%, base year FY 1985 to 25% by FY 1988.

Projects Contributing to Attainment of Benchmarks

- 0071 - Training Evaluation and Support Service (TESS)
 - 2005 - English Language Training Effectiveness
 - 0601 - Labor Development
-

3.4.1. Improve Analytical Methodologies and Fiscal Resource Utilization in Education

The highest marginal returns on investments in education will result from improvements in the quality and efficiency of existing systems. The lack of capacity to collect and use relevant data in the process of making education policy and program decisions is a major constraint. Our benchmarks to address these constraints include:

- Update the Education Sector Assessments conducted in Liberia, Somalia, Botswana, Yemen, Haiti, and Indonesia by FY 1988.
- Conduct workshops to strengthen the capabilities of policy-makers and administrators of the Ministries of Education, Planning and Finance in the above cited countries in FY 1987 and 1988.
- Summary of current thinking and existing research of the relationship of six key variables - physical facilities, instructional materials, learning techniques, educational management, instructional techniques and data base management - synthesized and published by FY 1988.
- Provide goods and services to improve the analytical skills of professionals in the Ministry of Education in Botswana, Liberia, Somalia, Haiti, Indonesia, Nepal, and Yemen in FY 1987 and FY 1988.
- Design a plan to improve higher education for agriculturalists in selected African countries in FY 1987 and FY 1988.
- Complete the preparation of resource allocation computer models and accompanying documentation in English, French, and Spanish by FY 1988.
- Guidelines and implementation strategies for acquiring local revenue for the purpose of decentralizing education systems established by FY 1988.

Projects Contributing to Attainment of Benchmarks

- 5823 - Improving the Efficiency of Education Systems
 - 5824 - Research In Education Programs
 - 5303 - Local Revenue Generation and Administration
-

3.5.1 Adapt Technologies Enabling Countries to Educate Better,
More People

Great improvements can be made in education by better using existing resources. However, major breakthroughs will come about only by the introduction of tested, reliable and effective technology. The Bureau's benchmarks for identifying and testing cost-effective technologies for education include:

- Complete the second year of teaching science to upper primary school children by radio in Papua, New Guinea by FY 1988.
- Start-up of collaborative effort between the Bureau and at least three of the following Missions - Somalia, Liberia, Egypt, Honduras, or Swaziland - to teach English and math by radio well underway by FY 1988.
- Exploration of the potential for use of telecommunications as a tool for transferring development information in progress in both Latin America and Africa.

Projects Contributing to Attainment of Benchmarks

5818 - Radio Science
1109 - Education Technology: Studies and Applications
1231 - Development Communications Clearinghouse

S&T FY 88 PROGRAM BY KEY PROBLEM AREA

ILLITERACY, LACK OF EDUCATION

RANK	OFFICE	PROJECT/APPROP	TITLE	FY 88	CUMULATIVE
1	ST/ED	9365823 EHG	IMPROVING EFFICIENCY OF ED. SYSTEMS II	2300	2300
2	ST/ED	9365824 EHG	RESEARCH IN EDUCATION PROGRAM	1400	3700
3	ST/IT	9260071 EHG	TRAINING EVALUATION AND SUPPORT SERVICES	1000	4700
4	ST/ED	9365818 EHG	RADIO SCIENCE	1500	6200
5	ST/IT	9362005 EHG	ENGLISH LANGUAGE TRAINING PROJECT	600	6800
6	ST/ED	9365303 EHG	LOCAL REVENUE GENERATION AND ADMINISTRAT	250	7050
7	ST/ED	9311109 EHG	EDUC TECH; STUDIES + APPLICATIONS	200	7250
8	ST/IT	9380601 EHG	LABOR ORGANIZATION DEVELOPMENT	800	8050

IV. Plan to Lessen Health Deficiencies:

IV.1 Rationale

Despite progress toward increasing life expectancy in recent years, the health and nutritional status of the majority of people in most developing countries remains poor. In many countries life expectancy does not exceed 50 years, one-quarter of all children die before the age of five, and hundreds of millions of adults suffer from chronic debilitating illness. Chronic illness and malnutrition lead to higher mortality, less working time, and lower productivity among both children and adults.

Good health is vital to the successful pursuit of economic growth and national development. Improving health requires progress on a number of fronts simultaneously: improving basic health technologies; improving the quality and cost-effectiveness of basic health services; improving nutrition; encouraging birth spacing; improving environmental conditions (water, sanitation, vector-borne disease control); improving understanding of good health and hygiene practices among the citizens in the developing world themselves, so they can take a more active role in promoting better health for themselves and their families.

The Bureau's health portfolio is designed to:

- create basic, cost-effective technologies for use in primary health care programs;

- promote strategies for better diagnosis, prevention (if possible) and treatment (when necessary) of infectious and parasitic diseases common to children;

- identify and promote strategies to alleviate undernutrition;

- alter the environmental conditions which currently exacerbate poor health; and

- improve the planning, management and financing of basic health programs, with particular attention to the role that donor coordination and policy dialogue can play.

The S&T Bureau's Health program directly supports the Agency's strategic focus on child survival. A.I.D.'s goal, as stated in the Blueprint for Development, is to reduce infant mortality to less than 75/1000 and mortality of children under five to less than 10/1000. A.I.D. has also joined with other international donors and host countries in a worldwide effort to provide access to immunization against six basic vaccine-preventable diseases and to prevent two million deaths in 1990 through the use of oral rehydration therapy against the dehydration caused by diarrheal diseases.

Beginning in FY 1986 and continuing through the planning period, A.I.D.'s Child Survival Strategy gives special emphasis to the following twenty-two countries. These countries account for nearly 70 percent of the infant and child deaths in the developing world.

Bangladesh	India	Senegal
Indonesia	Sudan	Bolivia
Kenya	Yemen	Mali
Bolivia	Morocco	Malawi
Ecuador	Nepal	Zaire
Egypt	Niger	Peru
Guatemala	Nigeria	Honduras
Haiti	Pakistan	

The Bureau for Science and Technology has a unique and important role in supporting the agency's program in these emphasis countries, by providing key technical and program backstopping in non-emphasis countries, and by developing new and improving existing technologies for use in primary health care programs.

IV.2 Long Range Objectives to Lessen Health Deficiencies

- 4.3. Increase the availability of effective health technologies.
- 4.4. Develop new and improved technologies for primary health care.
- 4.5. Provide more effective means to transfer technology.
- 4.6. Provide technical support for field programs and collaboration with other donors (UNICEF, WHO, UNDP, and PAHO) to achieve child survival goals for Oral Rehydration Therapy and immunization.

IV.3. Benchmarks for Increasing the Availability of Health Technologies

4.3.1. Develop New and Improved Technologies

- Vaccines:
- Test four malaria candidate vaccines using non-human models in FY 1987. Test four additional malaria candidate vaccines using non-human primate model in FY 1988.
- Initiate four clinical trials of malaria vaccines in FY 1987; identify two additional sites for clinical trials in FY 1988.
- Accelerate research on vaccines for measles, pertussis, typhoid, rotavirus, hepatitis B and pneumoccal polysaccharide by FY 1988.

- Develop and test new immunization schedules and strategies in four countries.
- Carry out 10 operations research studies to improve immunization delivery, an additional 20 in FY 1988.
- DIARRHEAL DISEASE CONTROL:
- Carry out research on improved ORS in FY 1988.
- Complete oral cholera vaccine trials in FY 1988.
- Field trials of rotavirus and TY21a typhoid in process and new shigella candidate vaccines developed in FY 1987.
- Above cited vaccine trials assessed and existing diarrheal disease vaccines adapted to epidemiological administration schedule by FY 1988.
- Begin 15 operations research studies to improve ORT delivery in FY 1987, an additional 20 in FY 1988.
- NUTRITION:
- Replicate studies to confirm linkage of Vitamin A and morbidity and mortality in two countries.
- Field test fortification of salt with vitamin A, in FY 1987.

Projects Contributing to Attainment of Benchmarks

- 0453 - Malaria Immunity and Vaccination Research
 - 1010 - Nutritional Improvement of Maternal/Infant Diet
 - 1126 - Tropical Disease Research
 - 5058 - HBCU Research Grants, Health
 - 5920 - PRICOR - II
 - 5928 - Diarrheal Disease Research
 - 5935 - Diagnostic Technology Development
 - 5947 - Vaccine Development and Health Research
 - 5951 - CSAP - Support
 - 5952 - Applied Diarrheal Disease Research
 - 5957 - Americares
-

4.4. Primary Health Care

4.4.1. The World Health Organization estimates that roughly half of the children who die in LDCs could be saved through simple low-cost, health care methods. The Agency has agreed to promote and disseminate these technologies. The Bureau's benchmarks related to the expansion of the availability of these simple technologies are:

- Implement 14 major oral rehydration/diarrheal diseases programs in FY 1987 and complete 17 in FY 1988.
- Improve child feeding during diarrheal episodes in 10 country programs in FY 1987/1988.
- Provide 130 months of technical expertise to ORT and immunization programs in LDCs.
- Initiate additional immunization programs in FY 1987 and in FY 1988.
- Increase by 7, Peace Corps workshops in delivery of ORT assistance in FY 1987 and by 8 in FY 1988.
- Provide assistance in vector control to 20 countries in FY 1988.
- Field 20 child survival fellows -- junior and mid-career professionals - to participate in the implementation of child survival programs and projects in FY 1987 and additional 20 in FY 1988.
- Extend Vitamin A supplementation in seven countries in FY 1988; expand home gardening outreach in Africa;
- Initiate field testing of sustained-release iron supplement in one country and field test improved iron fortification system in FY 1987.
- Provide 82 person months of short-term primary health care technical assistance in three countries by FY 1988 and long-term assistance in one country.
- Increase the numbers of children breastfed

Projects Contributing to Attainment of Benchmarks

- 0045 - Nutrition: Vitamin A Deficiency Program Support
- 0227 - Nutrition: Iron Deficiency Program Support
- 1018 - Communication for Child Survival
- 5112 - Nutrition in Health Delivery
- 5927 - Technology for Primary Health Care
- 5929 - Health and Human Services/Resource Support
- 5942 - WASH
- 5948 - Vector Biology and Control

IV.5. Technology Transfer

4.5.1. The effective use of child survival and other health technologies requires the appropriate training of health and allied personnel and the education and motivation of users. The Bureau will support the Agency's efforts to transfer child survival technologies through its investments in training and the application of modern communications strategies. In addition, the Bureau will support the transfer of production capability for ORT to the private sector in selected LDCs. The Bureau's benchmarks for the transfer of health technologies are:

- Increase by 11, country specific programs in health communications in FY 1987 and by 15 in FY 1988.
- Increase by two, the numbers of countries in which ORS is locally produced in FY 1987 by four in FY 1988.
- Provide training in public health education for 28 foreign nationals in FY 1987 and an additional 15 in FY 1988.
- Provide training for 120 village and mid-level paramedical health workers and managers in low cost health delivery systems in FY 1987, and an additional 80 in FY 1988.
- Provide training in advanced vector biology control in FY 1987 and an additional 60 in FY 1988.
- Develop social marketing strategy for vitamin A in FY 1987 and conduct related workshops in FY 1988.
- Initiate social marketing for maternal nutrition in FY 1987 and FY 1988.
- In 35 countries, establish 15 training courses to train 475 people the means of acquiring safe water and sanitation facilities.
- Continue distribution of ORT-Help newsletter to 130,000 readers (English and French) in FY 1987 and FY 1988. Translations in two additional languages by FY 1988.

- 0227 - Nutrition: Iron Deficiency Program Support
 - 1018 - Communication for Child Survival
 - 5932 - MEDEX Support
 - 5939 - Oral Rehydration Therapy - Health Education and Long-Term Planning
 - 5942 - Water Supply and Sanitation
 - 5953 - Supply Promotion and Production of ORT
-

IV.6 Collaboration on Child Survival Goals

4.6.1 A.I.D. has pledged to collaborate in an international effort to provide sustained access to ORT and immunizations against the major diseases of childhood. Goals for each are defined at the country level. Multi-donor collaboration at the country and sub-regional level is an important part of the international child survival effort as is the collection and analysis of accurate data on progress towards these goals. The Bureau's FY 1987/1988 benchmarks in this area are:

- Conduct health surveys in eight countries and analyze data from five countries in FY 1987. Conduct ten health surveys and analyze data from eight in FY 1988.
- Establish a regional nutritional surveillance system in Asia and complete national nutrition surveys in two countries in FY 1987.
- Provide technical support to missions in emphasis countries on evaluation of child survival projects in FY 1987 and FY 1988.
- Maintain a health statistics data base on child survival indicators and programs.

Projects Contributing to Attainment of Benchmarks

5111 - Establishing Nutritional Surveillance
5927 - PRITECH
5939 - ORT-HELP
5951 - Child Survival Action Program - Support
xxxx - Demographic Health Surveys
xxxx - Epidemiological Data Analysis

IV.7. New Project

936-5112 - Nutrition in Health Delivery

In compliance with the Agency Strategic Plan, this project will help overcome health deficiencies in developing countries by adapting nutrition goals, and interventions to the structure of existing health delivery systems. Although malnutrition strikes all age groups among the poor, the most sensitive indicator of the problem is the progress in the growth patterns of infants after the third or fourth month from birth. By the promotion of growth monitoring, mothers and health workers will be able to spot faltering growth before it becomes severe, and take appropriate corrective action. The manner of implementation will be mostly through technical assistance in nutrition education for mothers, the training of health workers in growth monitoring technology, and the training of senior health personnel in nutrition program planning.

S&T FY 88 PROGRAM BY KEY PROBLEM AREA

HEALTH DEFICIENCIES

RANK	OFFICE	PROJECT/APPROP	TITLE	FY 88	CUMULATIVE
1	ST/HEA	9310453 HEG	MALARIA IMMUNITY & VACCINATION RESEARCH	13000	13000
2	ST/HEA	9365927 HEG	TECHNOLOGY FOR PHC	8000	21000
3	ST/HEA	9311126 HEG	TROPICAL DISEASE RESEARCH	2500	23500
4	ST/N	9311010 HEG	NUTRITION; IMPRV OF MATERNAL/INFANT DIET	2550	26050
5	ST/HEA	9365928 HEG	DIARRHEAL DISEASE RESEARCH	4400	30450
6	ST/RUR	9365053 HEG	HBCU RESEARCH GRANTS	1300	31750
7	ST/ED	9311231 EHG	DEVELOPMENT COMMUNICATIONS CLEARINGHOUSE	250	32000
8	ST/HEA	9365939 HEG	ORT-HELP	1500	33500
9	ST/HEA	9365951 HEG	CHILD SURVIVAL ACTION PROGRAM SUPPORT	2000	35500
10	ST/N	9310045 HEG	NUTRITION; VITAMIN A DEFICIENCY PRG SPFT	2000	37500
11	ST/RUR	9365057 HEG	JOINT MOUS-HEALTH	2000	39500
12	ST/HEA	9311018 HEG	COMMUNICATION FOR CHILD SURVIVAL	2500	42000
13	ST/ED	9311018 HEG	COMMUNICATION FOR CHILD SURVIVAL	130	42130
14	ST/HEA	9365952 HEG	APPLIED DIARRHEAL DISEASE RESEARCH	2200	44330
15	ST/HEA	9365920 HEG	OPERATIONS RESEARCH-HEALTH	2000	46330
16	ST/RUR	9365055 HEG	TECHNICAL ADVISORY SUPPORT SERVICES	375	46705
17	ST/N	9365112 HEG	NUTRITION IN HEALTH DELIVERY	350	47055
18	ST/HEA	9365935 HEG	DIAGNOSTIC TECHNOLOGY DEVELOPMENT	2500	49555
19	ST/N	9365111 HEG	ESTABLISHING NUTRITIONAL SURVEILLANCE	400	49955
20	ST/HEA	9365942 HEG	WATER AND SANITATION FOR HEALTH II	3400	53355
21	ST/HEA	9365948 HEG	VECTOR BIOLOGY AND CONTROL	2500	55855
22	ST/HEA	9365929 HEG	HHS RESOURCE SUPPORT	200	56055
23	ST/HEA	9363023 HEG	DEMOGRAPHIC AND HEALTH SURVEYS	800	56855
24	ST/N	9310227 HEG	NUTRITION; IRON DEFICIENCY PRG SUPPORT	350	57205
25	ST/HEA	9365932 HEG	MEDEX SUPPORT	500	57705
26	ST/RUR	9365052 HEG	PROJECT REVIEW	25	57730
27	ST/HEA	9365963 HEG	EPIDEMIOLOGICAL HEALTH DATA DEVEL.	1000	58730

Plan to Redress Unmanageable Population Pressures

V. Rationale

Unmanageable growth in population impedes the ability to reduce hunger; diminishes efforts to increase growth in income; hurts attempts to lessen health deficiencies; and curtails work performed to abate illiteracy and lack of education. Under conditions of rapid growth population, resources are deflected from investments and the costs and difficulties of economic development are increased.

Rapid population growth exacerbates the choice between consumption now and investments needed to support higher consumption in the future. In countries where populations are dependent on agriculture, rapid population growth threatens the balance between scarce natural resources and people. Rapid increases in population make it hard to manage adjustments necessary to promote economic and social change.

The Population portfolio of the Bureau for Science and Technology seeks new means to ensure the availability of family planning services, allowing couples to voluntarily choose to regulate their fertility. By so doing the portfolio of the Bureau for Science and Technology contributes to the Agency's long-term development efforts.

V.2. Long Range Objectives to Redress Unmanageable Population Pressures.

- 5.3. Provide information on which developing world policy makers can base population policies.
- 5.4. Institutionalize capability to manage population programs.
- 5.5. Develop and distribute population technologies:
 - 5.1. Contraceptives
 - 5.2. Information
 - 5.3. Logistics
 - 5.4. Automated data processing management
- 5.6. Engage the private sector in social marketing and other types of family planning programs.

Benchmarks for Attaining Population Objectives.

5.3.1. Policy Dialogue

Governments have become increasingly aware of the impact of unmanageable population growth upon development efforts, and attitudes are more accepting of the need to plan a family. This

confluence provides a good opportunity to bring about policy reform in the context of family planning. The Bureau's family planning policy reform benchmarks are:

- Information from policy assessments and analyses conducted in prior years incorporated in specific country policies and programs in years FY 1987 and FY 1988.
- Population factors integrated into the development plans in selected countries in FY 1987 and FY 1988.
- Population development issues addressed in country specific government statements and policies in FY 1987 and FY 1988.
- Increase in financial allocations in the national budget for population and family planning.

Projects Contributing Attainment of Benchmarks

- 0643 - Population Policy Research
 - 3000 - Demographic Data for Development
 - 3017 - Resources for the Awareness of Population Impacts on Development
 - 3023 - Demographic and Health Surveys
 - 3027 - Integrated Population and Development Planning
 - 3035 - Population Policy Initiatives
 - 3046 - Demographic Data Initiatives
-

5.4.1. Institution Building

Training to help build an indigenous analytical capacity to conceive, plan, and implement strategies and programs for spacing children and planning families is essential to sustained progress in family planning. The Bureau's benchmarks are:

- Improve skills of leaders and managers of family planning programs in FY 1987 and FY 1988.
- Approximately 1000-1500 medical professionals and 3000-5000 medical and nursing students trained in family planning during both FY 1987 and FY 1988 as follows:
 - 40,000 trainee days for paramedicals in family planning;
 - 30-40 family planning professionals in short-term U.S. training courses;
 - 50 African trainers trained in Billings Ovulation Method in FY 1987.
 - Five baseline surveys of the content of curricula and the caliber of training methods used in reproductive health courses in LDC health professional schools and institutions;
 - 800 laparoscopes; 1000 medical instrument kits; and 150-200 units of endoscopic equipment provided to LDC training organizations;
 - Short-term U.S. training for 15-20 LDC family planning clinicians and medical administrators completed in FY 1987 and a similar number in FY 1988;
 - Management needs assessments completed in two countries in FY 1987;
 - Family planning communications activities underway in 20-25 LDCs in FY 1987 and an additional 25-30 in FY 1988;
 - On-the-job training in I.E.C. established in 4-6 countries in FY 1988.

Projects Contributing to Attainment of Benchmarks

- 0651 - Worldwide Training Funds
 - 3004 - Family Planning IEC Field Support
 - 3029 - Natural Family Planning Education and Training
 - 3031 - Family Training for Paramedical, Auxiliary and Community Personnel II
 - 3032 - Population Information Program
 - 3033 - Population Service Internship Program
 - 3039 - Family Planning Management Training
 - 3045 - Training in Reproductive Health II
-

5.5.1. Provide Technology

It is the Bureau's intent to assure that informed decisions about family planning methods can be made, that knowledge of options, including natural family planning is widespread, and that individuals have access to a full range of safe and effective techniques, supplies, and services. Benchmarks are:

- Approximately 31 new family planning service delivery activities in process in FY 1987 and 40 more started in FY 1988.
- Approximately 2850 person days of technical assistance in the design, management and evaluation of family planning service programs provided in FY 87 and 3300 in FY 1988.
- 35 million cycles of orals; 500 million condoms; 2.5 million I.U.D.'s; 15 million vaginal tablets distributed in 35 countries in FY 1987 and the same amounts in 42 countries in FY 1988.
- Improved logistical systems for monitoring requirements, receipt, distribution and storage of contraceptives initiated in FY 1987 and continued through FY 1988. Forty-two countries have been identified as target countries.
- Transition to Copper T 380A as the only I.U.D. provided by A.I.D. starting FY 1987.
- Clinical studies of the application of NORPLANT in 16 countries in FY 1987.
- Acquire USFDA approval of NORPLANT in FY 1988.
- Start Phase III clinical studies of microsphere injectable contraceptive in FY 1987. Complete Phase III in FY 1988.
- Initiate Phase I clinical studies for iodine method of nonsurgical contraception in FY 1987. Continue with Phase II in FY 1988.
- Initiate Phase I studies of new vaginal contraceptive device in FY 1987. Continue with Phase II in FY 1988.
- Submit application for approval of Filshie Clip to USFDA in FY 1988.
- Scientifically current family planning publications and information distributed to family planning program administrators in 50 LDCs, both years.

- Nineteen country studies in family planning service delivery started and delivery systems in five countries substantially improved in FY 1987. Sixteen additional studies started in FY 1988 and five systems substantially improved.

Projects Contributing to Attainment of Benchmarks

- 3041 - Family Health International
 - 3044 - Contraceptive Development and Research
 - 3030- Strategies for Improving Service Delivery
 - 3005 - Population Council Program
 - 3040 - Natural Family Planning
 - 3032 - Population Information Program
 - 3034 - Family Planning IEC Field Support
-

5.6.1. Inclusion of the Private Sector

To redress unmanageable population problems, the Bureau's portfolio retains the most useful features of past PVO programs and adds a new element -- use of commercial (for profit) entities to participate in providing family planning services. The commercial sector is by nature self-financing. Through use of the commercial sector, we intend to reduce the expense of implementing family planning program currently borne by governments. Our FY 1987/1988 benchmarks for private sector inclusion are:

- Thirty-one family planning service delivery programs implemented by the (for profit) private sector in FY 1987 and approximately 40 in FY 1988.
- Approximately 353 PVO sponsored family planning programs operating on a profit basis in FY 1987 and 387 in FY 1988.

Projects Contributing to Attainment of Benchmarks

- 0955 - Family Planning International Assistance Program (FPIA)
 - 0968 - Program for Voluntary Sterilization (AVS)
 - 3024 - Population Technical Assistance
 - 3028 - Contraceptive Social Marketing (SOMARC)
 - 3042 - Family Planning Services (Pathfinder)
 - 3034 - Family Planning Enterprise
 - 3035 - Population Policy Initiatives
 - 3037 - Expanding Family Planning Services through Women Managers (CEDPA)
 - 3043 - Expansion/Improvement of Family Planning Programs (WHR)
-

S&T FY 88 PROGRAM BY KEY PROBLEM AREA

UNMANAGEABLE POPULATION PRESSURES

IK	OFFICE	PROJECT/APPROP	TITLE		
1	ST/POP	9363041 PNG	FAMILY HEALTH INTERNATIONAL	9000	9000
2	ST/POP	9363031 PNG	FP TRNG FOR PARAMEDICAL AUX.COMMUNIT-II	4700	13700
3	ST/POP	9320968 PNG	PROGRAM FOR VOLUNTARY STERILIZATION-AVS	9600	23300
4	ST/POP	9363044 PNG	CONTRACEPTIVE DEV. & RESEARCH - CONRAD	3600	26700
5	ST/POP	9363023 PNG	DEMOGRAPHIC AND HEALTH SURVEYS	4000	30900
6	ST/POP	9363038 PNG	FP LOGISTICS AND MANAGEMENT	1900	32800
7	ST/POP	9363028 PNG	CONTRACEPTIVE SOCIAL MARKETING	4000	36800
8	ST/POP	9320955 PNG	FP INTERNATIONAL ASSISTANCE PROGRAM	10100	46900
9	ST/POP	9363030 PNG	STRATEGIES FOR IMPROVING SERVICE DELIVER	7500	54400
10	ST/POP	9363018 PNG	CONTRACEPTIVES PROCUREMENT	10000	64400
11	ST/POP	9363005 PNG	POPULATION COUNCIL PROGRAM	4100	68500
12	ST/POP	9363042 PNG	FAMILY PLANNING SERVICES-PATH FINDER	9700	78200
13	ST/POP	9363039 PNG	MANAGEMENT TRAINING	2600	80800
14	ST/POP	9363034 PNG	FP ENTERPRISE	5000	85800
15	ST/POP	9363017 PNG	AWARENESS OF POP IMPACT ON DEV (II)	500	86300
16	ST/POP	9363035 PNG	POPULATION POLICY INITIATIVES	4400	90700
17	ST/POP	9363004 PNG	POPULATION COMMUNICATIONS SERVICES	3000	93700
18	ST/POP	9363043 PNG	EXPANSION/IMPROV. FP PROGRAMS	4800	98500
19	ST/POP	9320502 PNG	POPULATION PROGRAM DEVELOPMENT/SUPPORT	1800	100300
20	ST/POP	9363045 PNG	TRAININF REPRODUCTIVE HEALTH II	5300	105600
21	ST/POP	9363024 PNG	POPULATION TECHNICAL ASSISTANCE	1000	106600
22	ST/POP	9363046 PNG	DEMOGRAPHIC DATA INITIATIVE	3000	109600
23	ST/POP	9363032 PNG	POPULATION INFORMATION PROGRAM III	2600	112200
24	ST/POP	9363037 PNG	EXTENDING FP SRVCS THRU WOMEN MANAGERS	800	113000
25	ST/POP	9363040 PNG	NATURAL FP	2000	115000
26	ST/POP	9363033 PNG	UNIVERSITY OVERSEAS SERVICE PROGRAM	700	115700
27	ST/POP	9320651 PNG	FP WORLDWIDE TRAINING FUND	300	116000

VII. PROGRAM MANAGEMENT

Evaluation

Evaluation is an integral component of the Bureau's project design and implementation process and plays a key role in measuring progress against purpose and strategy. The Bureau's evaluation program will be designed to ensure that: results are recorded and disseminated; recommendations are used; and lessons learned are applied.

For the period 1987/88, the proposed evaluation schedule is as follows:

Interim Evaluations

Interim evaluations will examine progress toward achieving the project's purpose, identify specific problem areas, provide guidance for revision, if needed, and give early indication of need for follow-on activities.

Agriculture

- 936-4021 - Technology of Soil Moisture Management
- 936-4137 - Biotechnology Tissue Culture

Nutrition

- 936-1064 - Nutrition: Surveys and Surveillances
- 931-1171 - Consumption Analysis of Agricultural Policies

Population

- 936-3000 - Demographic Data for Development
- 936-3023 - Demographic and Family Health Surveys
- 936-3031 - FP Training for Paramedics Auxiliaries II
- 936-3033 - University Overseas Service Program

Health

- 936-5939 - Oral Rehydration Therapy
- 936-5952 - Applied Diarrheal Disease Research

Education

- 936-5818 - Radio Science
- 936-5823 - Improving the Efficiency of Education Systems

Forest and Natural Resources

- 936-5518 - Coastal Resources Management
- 936-5547 - Forestry and Fuelwood Research Development (FRED)

Research and University Relations

- 936-5053 - The HBCU Research Grant Program
- 936-5058 - Joint MOU in Agriculture

Final Evaluations

Final evaluations will examine the same issues as the mid-term but will examine more thoroughly indicators of proof that projects have achieved their purposes.

FY 1987 Final Evaluations

Agriculture

- 931-0060 - Host Resistance - Integrated Tick Control
- 931-0613 - Nitrogen-Fixation Symbiotic
- 931-1118 - Aflatoxin Reducation in Maize
- 936-4084 - Agriculture Policy Analysis

Education

- 936-5811 - Rural Satellite Program

Some projects, managed by different offices in the Bureau for Science and Technology, are geared to the same target populations. For example, improved maternal and child health is the target of some health projects and some nutrition projects. It is our intent during FY 1987/88 to evaluate such projects as a unit in order to assess program impact.

Summary of Gray Amendment Contracting Achievements & Projections

The Bureau for Science and Technology (S&T) remains firmly committed to the full involvement of minority-owned and controlled organizations in its program activities. In FY 1985 the total amount of Development Assistance funds going to Gray Amendment Organizations totalled \$17.6 million, significantly above the Bureau's goal of \$14.2 million.

The FY 1986 Gray Amendment goal for S&T has been set at \$13.5 million; reflecting a 4.3% reduction over FY 1985.

In addition to ongoing efforts, several key initiatives will be undertaken by the Bureau over the next three fiscal years to use minority organizations more fully in its various program activities. Initiatives to be focused on minority and women-owned businesses include:

- o expanding sub-contracting opportunities through enforcement and monitoring of subcontracting plans on competitive procurements and the establishment of discrete (sub-contracting) goals;
- o establishing a modified, Bureau-specific and more effective version of the "Early Alert" System to identify and ensure consideration of appropriate Gray Amendment Organizations as early in the project development process as possible;
- o instituting more effective, efficient and equitable selection procedures as means of expanding the base of new, highly qualified minority and women-owned firms. (A Short-term benchmark will entail the use of a minimum of 15 such firms in FY 1986 and 30 in FY 1987.)
- o and, increasing and diversifying the number of work orders going to, and among, minority and women-owned firms holding IQCs, through more effective and efficient marketing and placement systems.

Historically Black Colleges and Universities (HBCUs) constitute a major component of the organizations covered by the Gray Amendment. During FY 1985 \$5.1 million in Development Assistance funded project activities went to HBCUs. Recognizing the unique and important role that these institutions can play in the international development process, the Bureau will take steps to ensure their continued growth and development, while strengthening their overall competitive posture. To this end, such activities will include, but not be limited to:

- o continuing efforts to expand participation of HBCUs, specifically in Agriculture and Health related projects, through Joint Memoranda of Understanding;
- o engaging HBCUs through the Small Research Grants Program for targetted AID-sponsored research, thus providing them with access to critical funding sources;
- o continuing dialogue with 1890 schools to determine how their proven expertise and experience can be more fully utilized in the identification and transfer of AID program derived agricultural technology;

- o exploring the feasibility of closer collaboration between minority and women-owned enterprises and HBCUs as joint-venture partners or support staff, as a means of diversifying and strengthening their collective qualifications, and
- o assessing new approaches for enhancing the Agency's efforts to strengthen the HBCUs' institutional and human resource capabilities.

Peace Corps

The Science and Technology Bureau has developed a variety of activities utilizing the unique abilities of the Peace Corps and is committed to expanding its relationships with the Peace Corps in the future. In the past, S&T and the Peace Corps have been able to mutually support development through nonformal university training programs, such as the Auburn University aquaculture project. S&T funding for fisheries and aquaculture training applicable to developing countries produced a significant number of Peace Corps Volunteer graduates who went on to serve overseas. The Peace Corps has sent staff members to other S&T funded programs, such as Water Synthesis Management II, to improve their technical expertise in water management in LDCs.

- o At the present time, S&T is beginning a major ten year collaboration with the Peace Corps through its Forest Resource Management project to train 125 Peace Corps Volunteer Foresters to assist in AID-supported forestry projects. This effort will utilize P.L. 480 Food for Peace funds to back reforestation and conservation efforts in LDCs. Peace Corps Volunteers will, in turn, train PVOs in forestry-linked watershed management and multi-purpose tree culture.
- o The S&T Office of Nutrition has a PASA with the Peace Corps to develop training systems and subsequently train Peace Corps Volunteers in home gardening. These trainers will provide instruction overseas to other Peace Corps Volunteers and counterparts to increase nutritional and income levels in LDCs.
- o The S&T Office of Health has several PASAs with the Peace Corps to involve Volunteers in the oral rehydration and immunization programs in LDCs funded through the Agency's Child Survival programs.
- o The AID/Peace Corps Small Project Assistance project provides funding through a PASA to enable the Peace Corps to respond to small-project targets-of-opportunity in LDCs.

As a result of the excellent experiences to date, S&T is developing a mechanism through the Coastal Resources Management project to utilize Peace Corps fisheries experts in increasing fish harvests and coastal zone management. Peace Corps Volunteers are now being recruited and trained in coastal zone management. Discussions are also underway to explore possible ways that S&T and the Peace Corps may be able to collaborate in environmental and natural resource protection efforts in LDCs.

S&T Bureau Pipeline

The S&T Bureau pipeline at the end of FY 1985 and the estimated pipeline at the end of FY 1986 is well within the Agency guidelines that allow the equivalent of 18 to 24 months forward funding. At the end of FY 1985, the S&T Bureau pipeline was approximately \$280 million. At the FY 1986 obligation rate, this represents just a little more than a year's forward funding. Based on current projections, the pipeline at the end of FY 1986 will be approximately \$240 million. At the current proposed FY 1987 obligation level, this also represents about one year's forward funding. It is S&T's intention to keep the Bureau's pipeline at about the same forward funding level (between 12 to 15 months). This will be done by continuing to closely review pipeline analyses that S&T requires for each funding document that is processed.

Buy-Ins

During FY 1985, contracts, PASAs and Cooperative Agreements authorized under 56, or 35%, of S&T's active projects received over \$31 million in buy-ins. We expect that FY 1986 buy-in activity will be about the same. The buy-ins, however, underscored a number of continuing management issues: shortage of staff in SER/PO, unanticipated demand using up contract authority considerably sooner than expected, and inability to charge expenditures to the correct obligation number.

SER/PO, in consultation with S&T and the regional bureaus, is currently drafting a revised set of procedures for buy-ins to solve the management issues without losing program effectiveness. The continuing availability of an effective "buy-in" mechanism is critical to the achievement of the program strategies supported by S&T and the missions.

Impact of Reduced Funding Levels

The greatest threat to achievement of our short-term objectives is the uncertainty of funding levels. Some examples:

- The program reductions in agriculture will increase the time needed to get effective results. Some projects, in order to maintain momentum in their research activities, have cut back on their agenda for follow-up to research already completed. This means, in many cases, that validation of research results in collaborating LDCs is being curtailed. Technical assistance and technology transfer are similarly affected.

Underfunded research projects are finding it difficult to maintain networking and training activities. In some cases, planned new directions which are logical extensions of work already done may not be implemented. Budget cuts in FY 1986 have been vigorously questioned by Title XII universities.

- Many projects carry out both collaborative research and development and technical field support. The R&D activities provide the knowledge base, methodologies, and skilled personnel that make it possible to provide high quality and timely field support to missions. The field work with missions improves and seasons these technologies over time and also opens up new R&D possibilities. Core funding for maintenance of this field support capability is a part of all such projects. In the event of funding reductions, we would protect the R&D activities of our rural development program at the expense of S&T contributions to field support. This would protect for the future the research knowledge and skills which are a product of considerable Agency investment. Relatively limited field technical support still would be available directly to missions or could be purchased by them through buy-ins. The extent to which this shift would have to take place would depend on the size of the budget cut.
- A reduction in the FY 1987 budget would result in the cancellation of several education projects. There is no room for shaving a little off each project given the current FY 1987 levels. Based on the priorities established by the Bureau and supported by the Sector Council for Education and Training the technology projects would be more vulnerable than the projects working directly on improving resource allocation. In FY 1988 there are currently insufficient funds to begin anything new even though the regional bureaus have requested help in several areas and the funding level will inevitably come down. The Bureau will not have a separate field support project in education or any activity in vocational-technical training.

- In health, funding below the AAPL level would sharply curtail or eliminate: (1) malaria field trials; (2) earmarked research at TER; (3) Child Survival fellows program; and (4) plans to launch a central procurement capacity for ORS and other child survival technologies.
- Reductions in funding for energy, biological diversity or Vitamin A, for example, would raise serious questions of Agency responsiveness to Congressional concerns.
- In population, although our basic strategy would not need to change, reductions in funding below the FY 1987 CP level could require elimination of activities in selected programs and/or geographic areas.

Staffing

S&T shares the Agency's staffing plight and would simply note here that just as adequate funding is critical to AID's scientific research and technological development, so is an adequate technical staff critical for planning, guiding, managing and evaluating R&D technical services and networks. The need for technical personnel exists not only in S&T but throughout the Agency. With recurring direct hire reductions we require ready access to outside advice and services. This means the use of non-direct hire scientific and technical talent. The Bureau has experimented with a number of innovative mechanisms to access this pool, such as the Joint Career Corps. However, some mechanisms are no longer available. We request continuing support throughout the Agency as we seek better methods of drawing on the skills of the scientific and technological community to the mutual benefit of us all.

S&T also is examining the possibility of consolidating projects to reduce the management demands and increase staff efficiency. The Bureau is exploring the possibilities of establishing "umbrella" projects to reduce the required paperwork and management time needed. However, such portfolio restructuring cannot totally mitigate the effects of staff reductions.

PROJECTS BY FUNCTIONAL ACCOUNT

1 AGRICULTURE, RURAL DEVELOPMENT AND NUTRITION

FY 1986 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)								
OBLIG	TOTAL COST			OBLIG	FY 85	FY 1986		FY 1987		FY 89	SPECIAL CODES	
G DATE	INIT	FIN	AUTH	PLAN	FY 85	LINE	OBLIG	EXPEND	OBLIG	EXPEND	PROPOSED	

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9310045													
G 75	89											PVO	
					13965	13965	7836	3475	5855	4000		4000	
9310014													
G 75	C												
					48720		3000		4000	4000		4000	
9310000													
G 77	C												
					5010		405			465			
9310203													
G 88	34												
					4145	4134	4134	75		75			
9310227													
G 76	89												
					2963	4600	2302	166		167			
9312242													
G 70	C												
					2107		160		190	190		240	190
9310202													
G 76	C												
					4592	10200	4464	792	733	960		800	1026
9310010													
G 76	88												
					7000	11200	5200	650	320	320		320	320
9310013													
G 75	88												
					11300	11300	8000	575	650	650		575	
9310021													
G 76	88												
					5095	5112	3645	262	400	400		400	400
9310031													
G 89	C												
					11159	11152	9381	751	500	670		550	600

PROJECTS BY FUNCTIONAL ACCOUNT

AGRICULTURE, RURAL DEVELOPMENT AND NUTRITION

FY 1966 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)							SPECIAL CODES			
PROJECT	DATE	TOTAL COST	INITIAL	OBLIG THRU FY 65	FY 66	OBLIG- ATIONS	EXPEND- ITURES	OBLIG- ATION	EXPEND- ITURES	PROPOSED	SPECIAL CODES			
9311010				NUTRITION: IMPRV OF MATERNAL/INFANT DIET										
G 79	88	5750	5750	4601	1722	---	785	---	937	---				
9311018				COMMUNICATION FOR CHILD SURVIVAL										
G 78	93	1400	1500	1200	1150	---	210	---	500	300	ORT	IM		
9311064				NUTRITION: SURVEYS AND SURVEILLANCE										
G 77	87	4885	4885	4433	849	---	849	---	---	---				
9311205				NUTRITION: EDUCATION FIELD SUPPORT										
G 79	89	2691	4341	2188	218	450	375	225	285	550				
9311290				SMALL ENTERPRISE APPROACHES TO EMPLOYMENT										
G 78	91	1475	1750	---	---	390	250	295	250	350	PVO			
9311296				FIELD SERVICES AND PROGRAM DEVELOPMENT										
G 77	C	---	---	6309	482	684	500	500	500	550	RM	PRZ		
9311121				AGROINDUSTRIAL RESEARCH DEVELOPMENT										
G 79	85	1095	1095	1095	85	---	85	---	---	---	PRZ			
9311135				HUMAN SETTLEMENTS AND NAT RFS SYS ANALY										
G 78	88	5344	5975	4625	1000	450	780	400	780	490	PVO	WA	PR	EM
9311171				NUT: CONSUMPTION ANALY OF AG POL.										
G 77	C	3390	3390	3370	498	---	498	---	---	---				
9311190				FOOD SECURITY IN AFRICA										
G 77	87	3615	3587	3587	1300	---	600	---	700	---	PRZ			
9311229				SOIL MANAGEMENT SUPPORT SERVICE										
G 79	C	---	---	5967	775	1000	1000	900	1000	1200	RM			
9311254				CRSP: SCPGHUM/MILLET										

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PROJECTS BY FUNCTIONAL ACCOUNT

AGRICULTURE, RURAL DEVELOPMENT AND NUTRITION

FY 1988 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)							
OBLIG				OBLIG	FY 85	FY 1986	FY 1987	FY 88			
G	DATE	TOTAL COST		THRU	PIPE-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	PROPOSED	SPECIAL COLFS
L	INIT	FIN	AUTH	PLAN	FY 85	LINE	ATIONS	ITURES	ATION	ITURES	
G 79	C	---	---	22487	4337	2220	3000	2800	3000	4000	
9311274	NUTRITION: CONSUMPTION EFFECTS OF AG POL										
G 84	E5	1800	2000	2053	137	---	137	---	---	---	
9311282	TITLE XII STRENGTHENING GRANTS										
G 79	C	---	---	36477	6049	1795	4812	1530	4500	2240	
9311309	FUNCTIONAL IMPLICATION-MALNUTRITION CRSP										
G 81	E7	11800	11977	10288	2435	1242	2300	450	1273	---	
9311310	CRSP: BEANS AND COWPEAS										
G 80	C	---	---	16700	3384	2600	2950	2800	3000	4000	
9311311	CRSP-PROGRAM: SOILS MANAGEMENT										
G 81	C	---	---	10450	2552	2600	2280	2500	2400	3500	RM
9311314	AQUACULTURE TECHNOLOGY DEVELOPMENT										
G 78	C	---	---	2976	134	310	270	345	300	425	RM
9311323	STORAGE AND PROCSSG OF FRUITS AND VEGS										
G 80	92	5415	5610	2265	265	400	360	400	750	750	
9311328	CRSP-PROGRAM: SMALL RUMINANTS										
G 78	C	---	---	25932	4822	2500	3100	2500	3200	4200	
9361406	PROGRAM DEVELOPMENT AND SUPPORT										
G 72	C	---	---	3078	598	1416	700	1000	1000	1000	
9361421	AID/PEACE CORPS SMALL PROJECT ASST										
G 85	E7	1415	1415	---	---	340	300	---	40	---	
9361430	COMMUNICATIONS FOR FIELD SUPPORT										
G 88	90	---	2400	---	---	---	---	---	---	500	
9364021	TECHNOLOGY OF SOIL MOISTURE MANAGEMENT										

PROJECTS BY FUNCTIONAL ACCOUNT

AGRICULTURE, RURAL DEVELOPMENT AND NUTRITION

FY 1988 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$200)							
OBLIG				OBLIG	FY 85	FY 1986	FY 1987	FY 88			
G	DATE	TOTAL COST	THRU	PIPE-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	PROPOSED	SPECIAL CODES	
L	INIT	AUTH	FIN	PLAN	FY 85	LINE	ATIONS	ITURES	ATION	ITURES	
G	E1	C	---	---	1785	485	700	700	600	650	900 WA
9364023	CRSP - POND DYNAMICS										
G	E2	C	---	---	3250	1124	1040	1040	1040	1040	1300
9364024	FISHERIES DEVELOPMENT SUPPORT SERVICES										
G	E2	C	---	---	685	150	300	300	300	240	325 PM
9364040	CRSP - PEANUTS										
G	E2	C	---	---	4379	1020	2400	2400	2400	2400	3100
9364053	MARKET AND TECHNOLOGY ACCESS										
G	E2	91	2375	5500	1320	550	540	720	450	650	635
9364054	INTERNATIONAL BENCHMARK SITES NETWORK										
G	E2	90	9930	9930	3500	1650	400	1000	815	1000	1100
9364063	HOST RESISTANCE INTEGRATED TICK CONT.										
G	E3	88	1450	1450	250	270	300	300	300	300	---
9364064	AGRICULTURAL PLANNING AND POLICY ANALYSIS										
G	E3	88	9200	7370	---	---	1400	1050	920	1250	1500 PRZ
9364099	FARMING SYSTEMS SUPPORT										
G	E2	87	9953	7888	5042	2025	720	1445	540	550	---
9364109	AGRICULTURAL TECHNOLOGY RES + DEVELOPMENTS										
G	E1	C	---	---	4106	1138	973	1000	1500	---	1000
9364111	INT AGRICULTURAL RESEARCH CENTERS										
G	E8	C	---	---	3286	378	3240	3240	1950	1950	2150
9364120	POST HARVEST RODENT AND BIRD CONTROL										
G	E3	88	12805	4215	1624	169	---	169	---	---	---
9364127	WATER MGT SYNTHESIS II										

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PROJECTS BY FUNCTIONAL ACCOUNT

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TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. POLYMER COST (\$000)								
OFFIC	DATE	TOTAL COST	ORIG	FY 65	FY 1966	FY 1967	FY 68					
I INIT	FIN	AUTH	PLAN	THRU	PIPE-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	PROPOSED	SPECIAL COSTS	
				FY 65	LINE	ATIONS	ITURES	ATION	ITURES			
G 82	91	22600	15200	11440	2849	1635	2700	1700	1700	200	FR WA	
9364132	SOYBEAN UTILIZATION AND RESEARCH											
G 85	89	5950	5950	850	775	695	500	695	500	700		
9364136	SPECIAL CONSTRAINT RESEARCH											
G 85	89	4200	4200	316	290	700	900	700	750	2025		
9364137	BIOTECHNOLOGY TISSUE CULTURE											
G 84	C			2184	1668	500	1000	990	900	2085		
9364141	HIGH VALUE HORTICULTURE CROPS											
G 87	91		5000							900		
9364142	IPM AND ENVIRON PROT INCL BIO-CONTROL											
G 85	89	5800	6000	950	950		775	635	775	900	RM	
9364143	R+D OF IMP SEED PROD/UTILIZATION IN LDGS											
G 86	92	3420	4000			300	300	270	300	500		
9364144	POSTHARVEST GRAIN SYS/AGRI-BUSINESS R+D											
G 85	89	3245	5500	600	600		600	500	520	700		
9364146	CHSP: FISHERIES/STOCK ASSESSMENT RSCH											
G 85	C			500	400	800	750	800	800	1000	RM	
9364148	TECHNOLOGY TRANS FEEDBACK SYS IN AGRIC											
G 84	88	1732	1732	768	358		240		143			
9364149	CROP NEMATODE RESEARCH AND CONTROL											
G 84	P4	1000	1000	1000	494		330		164			
9364161	REPRODUCTIVE STUDIES ON MILKFISH											
G 84	84	1250	1250	1250	806		625		161	600		
9364173	VERTEBRATE PEST MANAGEMENT SYSTEMS RSD											

PROJECTS BY FUNCTIONAL ACCOUNT

AGRICULTURE, RURAL DEVELOPMENT AND NUTRITION

FY 1988 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

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PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)							
OFLIG	DATE	TOTAL COST	OBLIG	FY 85	FY 1986	FY 1987	FY 88	SPECIAL CODES			
L INIT FIN	AUTH	PLAN	THRU	PIPF-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	PROPOSED	---	
			FY 85	LINE	ACTIONS	ITURES	ATION	ITURES			
G 86	92	2445	2445	---	---	340	340	340	300	400	
9364176	IMP PLANT/ANIMAL TOLERANCE TO STRESS										
G 86	95	---	39800	---	---	1300	500	1300	1950	1000	
9364177	IMPROVED FNF THRU BIO-TECHNOLOGY										
G 86	96	---	9600	---	---	200	100	1000	1000	1200	RF
9364178	IMPROVED ANIMAL VACCINE THRU BIO-TECH.										
G 86	96	---	9000	---	---	900	400	1300	1700	1700	
9364179	IRRIGATION MGT SUPPORT AND RESEARCH										
G 88	C	---	---	---	---	---	---	---	---	1600	WA
9365053	HECU RESEARCH GRANTS										
G 84	C	---	---	1800	989	95	90	450	427	2600	
9365054	INFORMATION TRANSFER										
G 85	89	3300	4500	700	700	800	700	700	600	700	
9365055	TECHNICAL ADVISORY SUPPORT SERVICES										
G 85	89	2133	2133	796	796	100	95	250	238	260	
9365058	JOINT MOUS-AGRICULTURE										
G 81	90	---	20000	---	---	3270	1500	3270	4600	3500	
9365110	CONSUMPTN ANALYSIS OF FOOD & AG POLICIES										
G 86	C	---	7000	---	---	500	60	675	950	800	
9365301	RSCH ON ACCESS TO LAND/WATER/NATURAL RES										
G 79	91	5290	6110	4396	788	444	694	530	600	450	WA
9365303.01	LOCAL REVENUE GENERATION & ADMINISTRATIO										
G 79	91	3415	9200	2735	100	100	153	370	222	975	
9365313	SMALL FARMER MARKETING ACCESS										

PROJECTS BY FUNCTIONAL ACCOUNT

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FY 1988 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)								SPECIAL CODES		
OPLIG				ORLIG	FY 85	FY 1986	FY 1987	FY 88						
G	DATE	TOTAL COST-	THRU	PIPF-	OELIG-	EXPEND-	OPLIG-	EXPEND-	PROPOSED					
L	INIT FIN	AUTP	PLAN	FY 85	LINE	ITURES	ATION	ITURES						
0	81	91	2460	4350	1487	37	---	---	350	320	600	PRZ		
9365314	PSCH ON EMPRENEURSHIP ID AND DEVELOPM													
G	83	85	950	891	891	282	---	202	---	---	---	PRZ		
9365315	EXP. APPROACHES TO RURAL SAVINGS													
G	82	91	2116	5900	1855	705	210	800	455	450	718	PVO		
9365317	PERFORMANCE MANAGEMENT													
G	82	89	2843	3197	1446	824	387	741	618	875	746	PRZ		
9365426	EMPLOYMENT AND ENTERPRISE POLICY ANALYSI													
G	84	91	1250	3550	171	---	355	175	205	250	650	PRZ		
9365428	APPROPRIATE TECHNOLOGY INTERNATIONAL II													
G	83	88	18000	22000	13329	5902	2280	4193	2070	4000	2250			
9365433	RURAL DEVELOPMENT RESEARCH INITIATIVE													
G	84	88	1100	385	385	143	---	143	---	---	---	RM	PRZ	
9365438	DEVEL. STRATEGIES FOR FRAGILE LANDS													
G	86	91	6100	9500	---	---	420	250	500	420	900	RM	PRZ	FR WA PVO
9365517	ENVIRONMENTAL PLANNING AND MANAGEMENT													
G	82	90	550	850	500	250	---	---	100	75	250			
9365518	COASTAL RESOURCES MANAGEMENT													
G	83	89	8000	8000	1706	1381	650	750	850	870	1100			
9365519	FOREST RESOURCES MANAGEMENT													
G	80	89	19800	30000	8722	685	975	1524	1300	1435	2100			
9365517	FORESTRY FUELWOOD RES. AND DEVEL.													
G	85	91	32800	32800	2002	2057	2330	2900	2700	2800	3836	FR		
9365550	BIOLOGICAL CONSERVATION IN DEVELOPMENT													

PROJECTS BY FUNCTIONAL ACCOUNT

AGRICULTURE, RURAL DEVELOPMENT AND NUTRITION

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FY 1988 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE			ESTIMATED U.S. DOLLAR COST (\$000)								
OBLIG			OBLIG	FY 85	FY 1986		FY 1987		FY 88		
G	DATE	TOTAL COST	THRU	FIVE-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	PROPOSED	SPECIAL CODES	
L	INIT FIN	AUTH PLAN	FY 85	LINE	ATIONS	ITURES	ATION	ITURES			
G 86	91	---	5300	---	---	250	200	550	350	500	
9365701	LOW COST ENERGY TECHNOLOGY										
G 79	85	4325	4886	3925	275	---	275	---	---	EY	
9365729	BIOENERGY SYSTEMS AND TECHNOLOGY										
G 79	86	8100	9122	6222	1031	900	1600	1100	1250	1000 EY	
9365715	SMALL DECENTRALIZED HYDROPOWER (PVO)										
G 80	86	5500	4446	4446	502	---	502	---	---	EY	
9365728	ENERGY POLICY DEV AND CONSERVATION										
G 82	97	400	2000	---	---	---	---	600	285	200 EY	
9365730	RENEWABLE ENERGY APPLICATION/TRAINING										
G 81	90	8200	11000	1074	1074	400	1250	600	700	600 EY	
9365731	ENERGY FOR AGRICULTURE										
G 88	98	---	15000	---	---	---	---	---	---	500 EY	
9365826	COMMUNICATION FOR TECH TRANSFER IN AGR.										
G 85	90	250	1250	250	250	---	250	---	---	270	
9365826.50	COMM FOR TECHNOLOGY TRANSFER IN AGRIC										
G 85	92	7295	7295	272	272	310	200	207	200	300 PM PRZ PH WA	
9369897	MANPOWER AND ENERGY TRAINING										
G 81	96	---	650	---	---	---	---	400	275	200 EY	
APPROPRIATION											
TOTAL		353245	506489	378260	79755	65344	80769	62450	78881	85470	
GRANT		353245	506489	378260	79755	65344	80769	62450	78881	85470	
LOAN		---	---	---	---	---	---	---	---	---	

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PROJECTS BY FUNCTIONAL ACCOUNT

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POPULATION
FY 1988 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE			ESTIMATED U.S. DOLLAR COST (\$000)								
OPLIG			OPLIG	FY 85	FY 1986		FY 1987		FY 88		
G	DATE	-TOTAL COST-	TRU	PIPF-	OBLIG-	EXPEND-	OBLIG-	EXIFAD-	PROPOSED-	SPECIAL CODES-	
L	INIT	AUTH	PLAN	FY 85	LINE	ATIONS	ITURES	ATION	ITURES		

POPULATION PLANNING

9320122 POPULATION PROGRAM DEVELOPMENT/SUPPORT

G	EE	C	---	---	14771	176	1951	2200	1800	1920	1920	
---	----	---	-----	-----	-------	-----	------	------	------	------	------	--

9320137 FAMILY HEALTH INTERNATIONAL(FHI)

G	71	84	54838	52252	52246	1126	---	1106	---	---	---	
---	----	----	-------	-------	-------	------	-----	------	-----	-----	-----	--

9320146 APPLIED RESEARCH ON FERTILITY REGULATION

G	72	85	27378	19765	19765	3231	---	3231	---	---	---	
---	----	----	-------	-------	-------	------	-----	------	-----	-----	-----	--

9320124 TRAINING IN REPRODUCTIVE HEALTH

G	73	86	66241	96898	59663	7732	5000	6600	---	6132	---	
---	----	----	-------	-------	-------	------	------	------	-----	------	-----	--

9320121 MEASUREMENT OF DEMOGRAPHIC CHANGE

G	76	83	4995	3078	3078	5	---	5	---	---	---	
---	----	----	------	------	------	---	-----	---	-----	-----	-----	--

9320124 CONTRACEPTIVE PREVALENCE STUDIES

G	77	84	12665	11680	11680	30	---	30	---	---	---	
---	----	----	-------	-------	-------	----	-----	----	-----	-----	-----	--

9320132 FERTILITY IMPACT-DIFFERENT FP PROGRAMS

G	72	84	39747	27753	27753	1107	---	1107	---	---	---	
---	----	----	-------	-------	-------	------	-----	------	-----	-----	-----	--

9320143 POPULATION POLICY RESEARCH

G	79	87	12665	9885	9565	1566	320	1150	---	736	---	PVO
---	----	----	-------	------	------	------	-----	------	-----	-----	-----	-----

9320111 FP WORLDWIDE TRAINING FUND

G	72	C	---	---	5034	60	350	300	300	310	300	
---	----	---	-----	-----	------	----	-----	-----	-----	-----	-----	--

9320127 FAMILY PLANNING SERVICES-PATHFINDER

G	78	84	77344	77343	77343	3303	---	3202	---	323	---	
---	----	----	-------	-------	-------	------	-----	------	-----	-----	-----	--

9320155 FP INTERNATIONAL ASSISTANCE PROGRAM

G	71	88	191520	220000	150941	15322	12600	13400	12000	13000	10100	PVO
---	----	----	--------	--------	--------	-------	-------	-------	-------	-------	-------	-----

PROJECTS BY FUNCTIONAL ACCOUNT

POPULATION

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FY 1988 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)						
OBLIG	TOTAL COST			OBLIG	FY 85	FY 1986	FY 1987	FY 88	PROPOSED	SPECIAL CODES
G	DATE	AUTH	PLAN	THRU	PIPE-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	
L	INIT	FIN		FY 85	LINE	ATIONS	ITURES	ATION	ITURES	
9320968	PROGRAM FOR VOLUNTARY STERILIZATION-AVS									
G 72	88	133006	202300	89178	9148	10200	12000	9600	11000	9600 PVO
9363222	DEMOGRAPHIC DATA FOR DEVELOPMENT									
G 82	87	7502	14300	5660	781	1782	1200	1382	1200	---
9363264	POPULATION COMMUNICATIONS SERVICES									
G 82	88	9995	46995	8082	3228	3100	3200	3000	3500	3000
9363275	POPULATION COUNCIL PROGRAM									
G 78	86	36287	38236	22922	6628	4464	5000	4100	5000	4100 PVO
9363217	AWARENESS OF POP IMPACT ON DEV (II)									
G 83	88	9800	16000	4708	883	1800	2000	1500	2000	500
9363218	CONTRACEPTIVES PROCUREMENT									
G 81		---	---	45910	3985	10000	7000	10000	7500	10000 PVO
9363223	DEMOGRAPHIC AND HEALTH SURVEYS									
G 84	83	24875	40250	9050	7405	2700	5200	3360	5300	4000
9363224	POPULATION TECHNICAL ASSISTANCE									
G 84	88	3120	11750	2224	839	1000	1163	1250	1300	1000
9363227	INTEGRATED POP DEV PLANNING II									
G 84	87	8848	34808	2034	523	1500	1325	850	1500	---
9363028	CONTRACEPTIVE SOCIAL MARKETING									
G 84	88	25000	25000	6600	4500	2000	3500	4000	4600	4000
9363229	NATURAL FAMILY PLANNING, EDUCATION/TRAINI									
G 84	85	1950	1957	1857	840	---	500	---	340	---
9363230	STRATEGIES FOR IMPROVING SERVICE DELIVER									

PROJECTS BY FUNCTIONAL ACCOUNT

POPULATION

FY 1966 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE		ESTIMATED U.S. DOLLAR COST (\$100)									
OBLIG	DATE	-TOTAL COST-	OBLIG	FY 85	---	FY 1965---	---	FY 1967---	---	FY 88--	
L	INIT	FIN	THRU	PIPE-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	PROPOSED	SPECIAL	COLES
		AUTH	FY 85	LINE	ATIONS	ITURES	ATION	ITURES			
G E4	88	36842	73200	12887	9038	7216	8650	7500	8500	7500	PVO
9363031	FP TRNG FOR PARAMEDICAL AUX. COMMUNIT-II										
G E4	88	28020	74800	11181	6205	5200	6100	4550	6000	4700	
9363032	POPULATION INFORMATION PROGRAM III										
G E4	88	8000	34000	5530	2050	2200	3000	2600	3000	2600	
9363033	UNIVERSITY OVERSEAS SERVICE PROGRAM										
G E4	88	3700	3700	1100	600	419	800	700	800	700	
9363034	FP ENTERPRISE										
G E5	89	39321	39321	5007	5007	2500	3500	5000	4400	5000	
9363035	POPULATION POLICY INITIATIVES										
G E5	89	29703	73363	2806	2573	3067	2500	3300	4500	4400	
9363037	EXTENDING FP SVCS THRU WOMEN MANAGERS										
G E5	89	7300	14500	800	747	600	800	800	900	800	PVO
9363038	FP LOGISTICS AND MANAGEMENT										
G E6	90	13019	31800	---	---	1000	50	1700	1900	1900	
9363039	MANAGEMENT TRAINING										
G E5	89	17679	17679	3495	3495	1131	2000	2600	3100	2600	
9363040	NATURAL FP										
G E5	89	20000	20000	2300	2150	1600	2000	2000	2500	2000	
9363041	FAMILY HEALTH INTERNATIONAL										
G E5	89	58500	58500	8700	7975	7550	7000	8300	8000	9000	
9363042	FAMILY PLANNING SERVICES-PATH FINDER										
G E5	89	60000	60000	12000	11100	8000	9000	9700	10000	9700	PVO
9363043	EXPANSION/IMPROV. FP PROGRAMS										

PROJECTS BY FUNCTIONAL ACCOUNT

HEALTH

FY 1986 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)								
OBLIG				OBLIG	FY 85	FY 1986		FY 1987		FY 86		
G	DATE	TOTAL COST		THRU	PIPF	OBLIG	EXPEND	OBLIG	EXPEND	PROPOSED	SPECIAL CODES	
L	INIT FIN	AUTH	PLAN	FY 85	LINE	ACTIONS	ITURES	ATION	ITURES			
HEALTH												
9310645 NUTRITION: VITAMIN A DEFICIENCY PRG SPPT												
G	75	89	5697	3682	725	250	---	250	---	---	2000	
9310227.01 NUTRITION IRON DEFICIENCY PKG SUPPORT												
G	76	89	950	2300	475	175	200	325	100	150	350	
9310453 MALARIA IMMUNITY & VACCINATION RESEARCH												
G	75	89	75112	75112	50340	15044	7500	11000	9000	12000	13000 IM	
9311010.03 NUTR IMPROV MATERNAL/INFANT DIET PH II)												
G	79	88	14227	11148	6073	1111	950	1500	1575	1350	2550 ORT	
9311010 COMMUNICATION FOR CHILD SURVIVAL												
G	78	90	19500	19500	---	---	200	150	---	50	2500 ORT IM	
9311064 NUTRITION: SURVEYS AND SURVEILLANCE												
G	77	87	2000	925	---	---	525	300	400	585	---	
9311065 NUTRITION: EDUCATION FIELD SUPPORT												
G	79	85	---	275	---	---	---	---	275	260	---	
9311126 TROPICAL DISEASE RESEARCH												
G	78	90	22300	40300	22300	1500	2500	1500	2500	1500	2500	
9311198 NUTRITION: HEALTH SYSTEMS RSSA												
G	77	8	1660	2000	700	175	325	375	325	325	---	
9320024.02 TRAINING IN REPRODUCTIVE HEALTH												
G	73	86	7650	7650	4350	1350	---	1350	---	---	---	
9361406 PROGRAM DEVELOPMENT AND SUPPORT												
G	72	8	---	---	63	63	---	50	---	13	---	

PROJECTS BY FUNCTIONAL ACCOUNT

HEALTH

FY 1986 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$'000)										
OFIIG	DATE	TOTAL COST	OFIIG	FY 85	FY 1986	FY 1987	FY 88							
L INIT FIN	AUTH	PLAN	THRU	PIPE-	OBLIG-	EXPEND-	OBLIG-	EXPEND-	PROPOSED	SPECIAL CODES				
			FY 85	LINE	ACTIONS	ITURES	ATION	ITURES						
G 83	89	44700	44700	10814	6554	4200	7749	---	1500	5220	ORT	IM	PVO	
9365928 LIARRHEAL DISEASE RESEARCH														
G 84	85	18025	18025	4675	2100	3550	3700	5500	4500	4400	IM	OPT		
9365929 PHS RESOURCE SUPPORT														
G 84	0	---	---	300	200	200	220	200	250	200				
9365932 MELEX SUPPORT														
G 83	87	4000	4000	2402	800	500	1000	1000	1100	500	PVO			
9365935 DIAGNOSTIC TECHNOLOGY DEVELOPMENT														
G 85	91	11000	11000	500	500	625	800	1500	700	2500				
9365939 ORT-HFIP														
G 84	88	4000	7300	4231	1951	1100	900	1025	1500	1500	ORT	PC		
9365940 PEDIATRIC CHRONIC DIARRHEAL DISEASE														
G 84	87	3000	2700	1900	700	800	---	700	---	---	ORT			
9365942 WATER AND SANITATION FOR HEALTH II														
G 84	85	19700	19700	3930	1200	2400	2700	2500	3100	3400	WA	PC	PVO	
9365947 VACCINE DEVELOPMENT AND HEALTH RESEARCH														
G 84	88	6000	5430	5430	4801	---	600	---	---	---	IM			
9365948 VECTOR BIOLOGY AND CONTROL														
G 85	94	19000	19000	2250	2130	600	1700	2000	2200	2500	WA			
9365950 ASIA/PACIFIC PUB HEALTH MGMT PRCG														
G 85	88	2200	2200	2200	1800	---	450	---	450	---	OPT			
9365951 CHILD SURVIVAL ACTION PROGRAM SUPPORT														
G 85	88	8000	8000	201	240	1350	200	400	350	2200	PVO	IM	OPT	PLZ
9365952 APPLIED DIARRHEAL DISEASE RESEARCH														

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PROJECTS BY FUNCTIONAL ACCOUNT

HEALTH

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FY 1988 ANNUAL BUDGET SUBMISSION
TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$100)							
OBLIG	DATE	TOTAL COST		OBLIG	FY 85	FY 1986	FY 1987	FY 88			
INIT	FIP	AUTH	PLAN	THRU	PIPE	OBLIG	EXPEND	OBLIG	EXPEND		
				FY 85	LINE	ATIONS	ITURES	ATION	ITURES		
									PROPOSED	SPECIAL CODES	
G 85	90	11500	11500	652	652	550	1000	1500	620	2222	OBT
9365953	SUPPLY PROMOTION AND PRODUCTION OF OBT										
G 85	85	1973	1973	1973	1973	---	1500	---	473	---	
9365954	WAREHOUSE SCHOOL OF MEDICINE										
G 85	85	897	897	897	847	---	300	---	547	---	
9365957	AMERICARES										
G 85	85	800	800	800	775	---	250	---	825	---	PVO
9365958	MILWAUKEE INT'L HEALTH TRAINING CENTER										
G 86	86	425	425	---	---	425	80	---	345	---	
APPROPRIATION											
TOTAL	342214	365756	147952	56255	33700	48114	35300	43043	57350		
GRANT	342214	365756	147952	56255	33700	48114	35300	43043	57350		
LOAN	---	---	---	---	---	---	---	---	---		

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PROJECTS BY FUNCTIONAL ACCOUNT

EDUCATION AND HUMAN RESOURCES

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FY 1968 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$220)								
OBLIG				OBLIG	FY 65	FY 1966		FY 1967		FY 68		
C	DATE	-TOTAL COST-		THRU	FY 65	OBLIG-	EXPEND-	OPLIG-	EXPEND-	PROPOSED	SPECIAL CODES	
L	INIT	FIN	AUTH	PLAN	FY 65	LINE	ATIONS	ITURES	ATION	ITURES		
EDUCATION AND HUMAN RESOURCES												
9260071.01 TRAINING EVAL AND SUPPORT SERVICES												
G	77	C			5452	424	1260	1260	900	900	1200	
9311217 RADIO LANGUAGE ARTS												
G	79	E5	4171	4161	4161	146		146				
9311254 STRUCTURING NEE RESOURCES												
G	79	E6	7700	5790	5740	266	50	336				
9311120 EDUC TECH: STUDIES + APPLICATIONS												
G	77	E9	6601	6601	5330	602	400	600	150	400	200	
9311231 DEVELOPMENT COMMUNICATIONS CLEARINGHOUSE												
G	80	E9	2760	2760	1749	124	200	275	250	275	250	
9362005 ENGLISH LANGUAGE TRAINING PROJECT												
G	66	E6		1700			500	500	600	600	600	
9365303 LOCAL REVENUE GENERATION AND ADMINISTRATION												
G	79	E8	630	500					250	150	250	
9365317 PERFORMANCE MANAGEMENT												
G	82	E9	2843	3500	2544	334	125	430	225	200	250	PR2
9365807 RADIO COMMUNITY BASIC EDUCATION												
G	81	E6	4266	3910	3910	601		601				
9365811 RURAL SATELLITE PROGRAM												
G	79	E9	22000	8918	8212	431	350	761				
9365816 RADIO SCIENCE												
G	84	E2	8620	8020	1228	862	1302	1000	1475	1450	1500	

PROJECTS BY FUNCTIONAL ACCOUNT

SELECTED DEVELOPMENT ACTIVITIES

FY 1988 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)							
OBLIG				OBLIG	FY 85	FY 1986		FY 1987		FY 88	
G	DATE	-TOTAL COST-		THRU	PIFF-	OBLIG-	EXPEND-	OBLIG+	EXPEND-	PROPOSED	OFFICIAL CODES
L	INIT	AUTH	PLAN	FY 85	LINE	ATIONS	ITURES	ATION	ITURES		

SELECTED DEVELOPMENT ACTIVITIES

9311090	SMALL ENTERPRISE APPROACHES TO EMPLOYMENT	G 78	91	4009	4909	2004	322	300	400	305	400	350	PVO
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9311209	INVR NATURAL RESOURCES EXP INFO BASE	G 78	85	3100	3100	3100	373	---	373	---	---	---	
---------	--------------------------------------	------	----	------	------	------	-----	-----	-----	-----	-----	-----	--

9361400	PROGRAM DEVELOPMENT AND SUPPORT	G 72	0	---	---	3652	1270	004	1000	400	600	1000	
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9365052	PROJECT REVIEW	G 84	0	---	---	525	357	140	133	---	350	---	
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9365402	MANAGING ENERGY/RES. EFFICIENT CITIES	G 82	86	1500	1650	1500	220	150	172	---	207	---	
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9365426	EMPLOYMENT AND ENTERPRISE POLICY ANALYSI	G 84	91	1250	2750	1076	951	325	441	295	500	250	FRZ
---------	--	------	----	------	------	------	-----	-----	-----	-----	-----	-----	-----

9365517	ENVIRONMENTAL PLANNING AND MANAGEMENT	G 82	90	6115	6115	2513	929	055	050	1000	050	1000	
---------	---------------------------------------	------	----	------	------	------	-----	-----	-----	------	-----	------	--

9365519	FOREST RESOURCES MANAGEMENT	G 80	89	2170	1675	1670	26	---	26	---	---	---	
---------	-----------------------------	------	----	------	------	------	----	-----	----	-----	-----	-----	--

9365702	ENERGY TECHNICAL SERVICE SUPPORT	G 78	0	---	---	1702	70	150	170	100	125	100	EY
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9365724	CONVENTIONAL ENERGY TECHNICAL ASST	G 80	86	15250	15250	10000	2004	050	2334	1000	1300	1200	EY
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9365728	ENERGY POLICY DEV AND CONSERVATION	G 82	97	7000	14100	6134	1348	1300	2140	1100	1700	1500	EY
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PROJECTS BY FUNCTIONAL ACCOUNT

SELECTED DEVELOPMENT ACTIVITIES

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FY 1966 ANNUAL BUDGET SUBMISSION

TABLE IV - PROJECT BUDGET DATA

BUREAU FOR SCIENCE AND TECHNOLOGY

PROJECT NUMBER AND TITLE				ESTIMATED U.S. DOLLAR COST (\$000)						
ORLIC				ORLIC	FY 65	FY 1966		FY 1967		FY 68
G	DATE	-TOTAL COST-	THRU	PIFY-	ORLIC-	EXPEND-	ORLIC-	EXPEND-	CLOSED	SPECIAL CODES
L	INIT	FIN	AUTH	PLAN	FY 65	LINE	ACTIONS	ITURES	ACTION	ITURES

9369957	MANPOWER AND ENERGY TRAINING									
G 51	96	14002	16525	11079	1993	1602	2493	1100	1922	1400 FY

APPROPRIATION

TOTAL	55024	65974	46641	9960	6574	10540	5300	7532	6900
GRANT	55024	65974	46641	9960	6574	10540	5300	7532	6900
LOAN	---	---	---	---	---	---	---	---	---

FUNCTIONAL ACCOUNT

TOTAL	1963505	2690084	1326537	283068	228293	277545	235450	279352	274370
GRANT	1963505	2690084	1326537	283068	228293	277545	235450	279352	274370
LOAN	---	---	---	---	---	---	---	---	---

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BUREAU FOR SCIENCE AND TECHNOLOGY

ACTION PLAN

DISCUSSION PAPER

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