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AFRICA BUREAU

INFORMATION NEEDS ASSESSMENT

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## EXECUTIVE SUMMARY

A.I.D. needs better information--and it needs to make better use of existing information--if it is to develop successful projects and programs with available staff at lower cost. Better information is also the key to verifying the results of A.I.D.'s efforts.

You and your staff already spend a major part of your time obtaining, analyzing and using information to plan your programs, allocate resources, and evaluate results. Yet, you have fewer personnel to handle an increased volume of important information and A.I.D.'s other resources today than in the past. In 1969, A.I.D. had about 19,000 employees. Twenty years later your total worldwide staff numbers less than 4,500. This is fewer personnel than the U.S. Navy has on board just one aircraft carrier. Carrying out your entire global development effort with this small staff means that each employee must be able to shape, implement and monitor effective programs quickly. To do this, they must obtain and process key information very efficiently. Your top management support for major improvement in the information environment of the Africa Bureau is central to achieving this necessary level of efficiency.

Providing information on the successful performance of Africa Bureau programs is increasingly worth a premium. Congress and the public want to know the results of your efforts and intend to use these results as the basis for additional funding of specific programs. Information documenting your progress will be crucial in obtaining needed development resources and in guiding their application.

Right now the Bureau's information system is inadequate. Many important data needs are unmet; some are met very inefficiently. For example, program impact data is missing in many cases; pipeline analyses are not readily available. There is not a coherent information strategy. Key questions about how to proceed with improvement of the system remain unanswered. No organizational focal point--such as an information unit or administrator--for information system enhancement exists. Staff are not supported adequately in developing and using computer and related information skills. Many rely completely on self help--computer manuals and other colleagues--or are dependent on a relatively few technically proficient individuals for data access or products.

Bringing the Africa Bureau more effectively into the information age will be a complex undertaking. The Africa Bureau is not yet managing information effectively as a resource. You are far behind major corporations and many non-profit and public sector ones in organizing and operating to manage and use information. In Washington, you are well behind many of your own Missions in implementing information systems. Your exceptional staff is both less efficient and

under-utilized because it is not as well trained, equipped, and supported as it needs to be to succeed in an information age.

Your staff has hundreds of information needs, many of which are required for each major function and process. Most of these requirements are common to more than one office in the Bureau and to more than one important Bureau function. Each user of this "common" information may have identical, similar or unique information requirements. These varying needs determine the characteristics common information must possess to satisfy users applying it in different ways or for specialized purposes.

As top managers in the Bureau, some of your specific information needs, including the form and volume of data needed, have not been identified sufficiently or made clear to staff. Many of your information requirements are different from those of other A.I.D. personnel and numerous of these are not now being met routinely. Frequently, you receive too much information. You want more of it to be analyzed or synthesized to enable you to understand and use it more quickly and effectively. Sometimes you do not receive the information you need.

Thirteen clusters of common information are used currently by the Bureau: (1) project obligations and expenditures; (2) allocations (OYB) including PL-480; (3) Bureau program review and approval; (4) sector/special interests; (5) economic; (6) direct hire personnel; (7) Mission program management; (8) private sector; (9) contractor resources; (10) other donor programs; (11) operating expense budget; (12) Agency/Congressional policy; (13) local currency.

The Bureau's key sources of information are 78 important documents or types of documents (e.g., PPs) and 127 electronic databases. These sources and the information system supporting them meet many of the information needs of Bureau staff. Africa Bureau personnel did, however, identify over 200 specific unmet information needs. The reasons for these unmet needs fell into two categories: (1) data exists but some characteristic of the information renders it unuseful to the user, and (2) data was not available.

Specific reasons for unmet needs in category (1) above included: User was unaware of the data; information was out of date, incomplete, inaccurate, too aggregated, too detailed, unsuitably defined, untimely, or hard to access; or the information consisted of controlled/sensitive data that could not be accessed when needed. Accessibility to existing information was identified by your staff as the most frequent unmet need. Sometimes information is available, but staff are unaware of it or do not have training to access it for themselves. Access to databases is sometimes too dependent on specific individuals. Five information clusters have high unmet needs because the Bureau must get its data from outside sources--e.g., other Bureaus or the World Bank.

In category (2) above, important data was not available in some areas. The key "information gaps" identified in the Africa Bureau are:

- o Country and region performance and trend data (e.g., social, economic, political, environmental);
- o U.S.A.I.D. program effectiveness and impact by country and region;
- o Aggregate program by sector data;
- o Aggregate information on food-aid and food needs for planning;
- o Personnel data on special experience by sector (e.g., drought, locusts, etc.);
- o Sector/special interest performance data (e.g., AIDS, small business) by country and region;
- o Qualitative information on other donor assistance.

Several of these gaps involve the "performance" information (e.g., impact data) needed by the Bureau to guide or assess its programs. Special effort to obtain this information will pay large dividends. It will enable the Bureau to guide program implementation more precisely and assess program performance with more confidence.

The purpose of the Africa Bureau Working Committee on Data Systems was to manage an information needs assessment as a first phase in the development of an integrated, consistent and timely information system for the Bureau. The results of this assessment validate the Committee's concern. It shows there is major need and great potential to build upon the Bureau's existing information system.

A higher quality, better managed information system is essential for the Africa Bureau. It will increasingly be at the center of the Bureau's efforts to mobilize scarce public sector resources for development and to use them more efficiently and effectively than ever before. Your support, as top management, for major improvement in the information environment of the Africa Bureau is an essential ingredient.

The next important step recommended is development of an information strategy for the Africa Bureau. This strategy will specify the Bureau's information objectives in relationship to its development requirements and determine the means for achieving them. It will identify and resolve information related issues: The relative value of information, including its integration with other resources to help define and achieve A.I.D.'s development goals; the institutional organization necessary to develop and manage the Bureau's information; the technological approach to be used in providing for information development, management and use; development and use of common guidelines regarding the information resource; the degree to which available financial and personnel resources will be devoted to information activities. Creation of the strategy will support well

planned development of the Bureau's information system and reinforce the careful phased approach the Bureau has begun in seeking to improve its information environment. Most importantly, taking this next step will continue the essential process of realizing the full potential of information as a resource in the Africa Bureau.

Key recommendations for improving the Africa Bureau's information system are:

- o Top management should treat information as a key resource within the Bureau and direct at once the substantial additional development of its information system.
- o An information strategy should be prepared by the Bureau as the next step in enhancing its information system.
- o A detailed design for improvements in the existing information system should be undertaken by the Bureau after its strategy is agreed upon.
- o Top management should staff information activities in the Bureau with specific individuals whose roles are built into their jobs (e.g., the suggested staffing in IRM's Five Year Strategy for Information Resources Management).
- o Standards and guidelines for information producers and users within the Africa Bureau and in other A.I.D. Bureaus should be established by designated staff to improve the productivity and efficiency of the information system.
- o The Bureau should concentrate first on filling the high priority unmet needs identified in this assessment.
- o Staff training and practice in information production and use should be increased. Training should include use of advanced technologies (e.g., computer hardware/software and facsimile machines) and of the library, CDIE, and other information resources.
- o Bureau staff should participate in developing other A.I.D. databases and information systems of concern to the Africa Bureau.

## 1. INTRODUCTION

### A. Purpose of the Assessment

The purpose of this study is to conduct an information needs assessment of the Africa Bureau as a first phase in the development of an information system within the Africa Bureau to facilitate exchange and use of data between Bureau offices, other Agency offices, and field missions. The Scope of Work for this assignment is provided in Annex 1.

### B. Methodology used in the Assessment

In carrying out this assessment Devres used interviews, questionnaires, document and data set review and observation, principally within the Africa Bureau. We also depended upon the collaboration and involvement of the Africa Bureau Working Committee on Data Systems as a part of our methodological approach to this assignment.

We conducted our work in steps, some overlapping. The Working Committee, or members of it, were actively involved in or reviewed the results of each step. First, we formulated a work plan and questionnaire. The questionnaire was pretested and then distributed widely within the Bureau. Second, we prepared a detailed list of persons to be interviewed and began a continuous round of interviews with them. Third, we obtained documents, electronic data sets and other secondary forms and sources of information from Africa Bureau and other A.I.D. employees. The materials were identified and collected systematically; to ensure reasonable completeness, we consistently requested such materials from all interviewees and as a part of our questionnaire procedure. Fourth, we observed persons use, creation and distribution of information in the course of their work as a part of familiarizing ourselves with the information environment in A.I.D. and the Africa Bureau. Fifth, we developed an inventory of documents and an annotated inventory of key electronic databases containing information used by Africa Bureau personnel.

Sixth, based on our initial interviews, questionnaire returns, document review and observations, we developed an analytical framework to use in completing the assignment. The information used in the framework was drawn from the Africa Bureau using the interviews, questionnaires and other generic methodologies noted above. The framework developed involved the following steps and processes:

- o Specification of the key functions carried out by the Africa Bureau in accomplishing its development objectives;
- o Determination of the important decisions and supporting processes within each key function;

- o Identification of the important information requirements of each Africa Bureau Office in carrying out the key functions;
- o Specification of areas of information required in common by more than one office and function. We then reviewed this commonly used information and aggregated it into "information clusters." The central characteristics of these clusters were three: (1) the information within them was used by more than one office to meet more than one purpose; (2) the information within them was usually applied to more than one of the Africa Bureau's important functions; and, (3) the content of each tended to naturally belong together (was cohesive), usually from the perspectives of producers and users;
- o Identification of important information sources (documents and electronic databases) for each information cluster;
- o Identification of unmet information needs for each information cluster;
- o Assessment of the unmet information needs in each information cluster. Our analysis briefly described each information cluster and noted the sources of information and unmet needs for each cluster. We then examined and characterized the unmet needs of each cluster as to type, determined the reasons for key unmet needs, special problems created by them, and special training and other implications associated with resolving the unmet needs. In making this analysis we characterized the unmet needs as (1) data are not available and (2) data exists, but some characteristic of the producer, user or information creates an unmet need related to the data. Specific reasons for unmet needs included user was unaware of the data; information was out of date, incomplete, inaccurate, too aggregated, too detailed, unsuitably defined, untimely, or hard to access; or the information consisted of controlled/sensitive data that could not be accessed when needed.
- o Preparation of an outline of an information system for the Africa Bureau which presented major data sub-systems needed, described possible relationships among subsystems, made suggestions for data handling and administration within the proposed subsystem, identified issues to be dealt with in further developing the system, and set out next steps for the Africa Bureau to consider in better meeting its information requirements.

Seventh, using the above analytical framework as a guide, we completed the activities within it to produce this final information needs assessment. The findings, conclusions and recommendations in this assessment stem from the analysis carried out in completing each element of the analytical framework above.

## II. AN OVERVIEW OF THE INFORMATION ENVIRONMENT OUTSIDE AND INSIDE A.I.D.

### A. Information as a Resource<sup>1</sup>

The generation and use of information has increased dramatically in recent years for two reasons: first, the sheer quantity of information has been expanding as never before; second, the development of even more powerful computer/telecommunications systems makes it possible to store and access pertinent information almost immediately. The US has become an "information economy". The average executive in an organization spends the majority of his/her time in processing and communicating information. More than half of the US work force have jobs that primarily involve information processing, i.e., documents, reports, plans, analyses, etc. Indeed, the provision of information has itself become a major business.<sup>2</sup>

Information is now considered by many organizations to be an economic resource--a factor of production as important as the traditional factors of land, labor, capital, and management. This is because the possession and timely use of information can improve the quality and value of output very substantially. For private companies this can result in much larger sales and better profit margins. For public organizations it can mean the production of better projects and programs more quickly and at lower costs.

Information can be defined as data which has been processed to make it more valuable to the organization. Data itself is raw material--it can be manipulated and processed to create new knowledge useful to the organization, i.e., a resource. It is an input, like labor and capital, that helps produce outputs. For example, American Airlines extracts information on its frequent flyers from its computerized reservation system (Advantage). It then directs specific marketing promotions to these individuals. Now widely copied by others, this effort gave American Airlines significant competitive advantage during the initial phases of airline deregulation in the

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<sup>1</sup>Information in this chapter draws not only on our current work for the Africa Bureau, but upon assignments Devres has carried out for other clients, especially for PPC/CDIE, the Belize Ministry of Agriculture, the AUPHA, and the White House. See, in particular, Devres, Inc., Development Information in AID, Contract No. PDC-0085-I-00-6095-00, Work Order No. 8, November 16, 1987.

<sup>2</sup>The information business includes computer and software manufacturers, telecommunications companies, information processing and publishing companies, office equipment and systems firms, programming services, related consulting firms, and the like.

U.S.<sup>3</sup> A large book publisher computerizes and puts "on-line" its tax services materials to its legal and accounting clients, making its service much more timely and valuable than those of its competitors which continue to mail the traditional loose-leaf books to clients. Sears Roebuck uses information in numerous ways to increase its performance and extend its markets. For example, it monitors appliance purchases made by each customer together with service plans and maintenance calls carried out, thereby tracking for customers the status of each of their appliances.<sup>4</sup> Major medical organizations like Suburban Hospital in Bethesda, Maryland use information systems to speed the entrance of patients and document patient activity during each visit.

There are several categories of information. For purposes of this report two broad categories--administrative and program information are delineated. The first category assists in the internal control and management of an organization. It consists of such items as budgets, technological support systems, materials inventories, the status of contracts, personnel ranks and assignments. This type of information is essential to day-to-day organizational operations. The data needed is primarily within and under the control of the organization and thus fairly easy to capture and retain. It includes most of the routine quantitative activities called EDP (electronic data processing) in many firms. This administrative information is well developed and widely used in most large organizations today. However, as noted throughout this assessment, the advent of widely distributed computer power and telecommunications in such organizations raises both new potential and new problems in this information arena.

Program information, the second broad category, includes items such as technological developments, new project ideas, market conditions, activities of competitors, reactions of customers and clients, and use of evaluations to help design new programs and projects. This program information (often called "development information" in A.I.D.) is usually more difficult to organize and keep current than administrative information. It invariably lags behind and receives less attention by managers than administrative information. This is mostly because it is less easily acquired or controlled. For example, some of it is transitory and much of it is external to the entire organization or to units within the organization. Those who have such information, even within the same organization, often hold it closely and do not make it easily available to others. Second, sometimes this information is subjective, not easily quantified, and applicable to overlapping purposes. It is not always possible or cost effective to organize and keep current such information unless there is an imperative demand for it by the organization. Yet in many ways this development information is very important because it relates to the very existence of organizations. In the case of profit-oriented

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<sup>3</sup>Jackson, Ian, Corporate Information Management (US: Prentice Hall, 1986), p. 6.

<sup>4</sup>Jackson, Corporate Information Management, p.6.

companies, if they cannot relate successfully to their outside environments they may ultimately collapse. In the case of non-profit or public sector entities, the absence of such information may make their programs less productive and more costly than appropriate or acceptable.

Any resource must be well managed to be most useful. Major corporations and organizations that recognize information as a significant resource have taken specific policy and organizational steps to effectively manage it. Some major corporations, such as Mobil, American Airlines, American Home Products, FMC Corporation, Reuters, Japanese financial and trading firms, etc., concentrate very hard on managing their information resources. The top management of such companies is primarily concerned with getting necessary and useful information to the right place in the organization at the right time to assist in making assessments and decisions. They are not particularly concerned with technical matters such as how computers operate, although they do want to keep up with technological advances that make information acquisition and flow more efficient.

These corporations invariably have an overall plan or strategy regarding the management of information. This plan comes from the top - it is discussed and approved by the Board of Directors, the Executive Committee, or the President or Chief Executive Officer (CEO). Thus all elements of the corporation are aware that top management fully recognizes the key importance of the information resource and is committed to effective management of it.

The key objectives and concerns of such information resource management strategies include the following:

- o Integration of information with all other organizational resources and use of information to help formulate and attain strategic objectives such as expanded markets, greater resource productivity, a higher quality of decision making, better program formulation and implementation, a more positive corporate image, etc.;
- o Enhancement of the organization's productivity and efficiency in all its information handling activities, including improving the integration of all human resources with the information management services' responsibilities within the firm; and
- o Integration of various forms of information (data, text, image, and voice) and the media (carriers) of both analog and digital information (paper, film, electronic, optical) and of all participating entities (nodes).

In many organizations, a senior manager or corporate officer is usually given responsibility for the overall management of information. This officer may have a title like Information Resource Director, or Senior Vice President for Information. He or she frequently runs an organizational unit reporting directly to the CEO or his/her Deputy.

In heavily centralized companies, most entities in the corporation that collect and process information work for this executive. But such is not the normal pattern. Large, worldwide corporations such as those mentioned above contain many databases which operate autonomously, but--and this is the key point--substantial effort is given to developing common standards, guidelines, and procedures regarding the information resource. These standards are typically set down by the senior information executive. S/he integrates and coordinates the various databases (some companies have more than 50 major ones, many minor ones and access to many more outside) through common policies, standards, controls, and compatible equipment. All units must participate in the system and share in it--all are both contributors and users. Audits and evaluations are conducted by the senior information executive periodically to check performance and assure that all units are performing under the approved policies and standards. His/her office also provides assistance, training, and technical services to all units, keeps current on new knowledge and expertise, and usually is responsible for the corporation's central database(s).

#### B. Management and Development Information in A.I.D.

A.I.D. is inundated with both administrative and program ("development") information. It is everywhere--in every office in A.I.D./Washington and in U.S.A.I.D.s overseas. It is provided and used by A.I.D.'s employees, contractors, and consultants at all levels, by developing countries, by many different organizations and by almost every person involved in development activities.

Administrative information has been particularly critical to A.I.D. because of shifting foreign assistance policies and objectives and the extensive personnel and management problems inherent in a worldwide program. As A.I.D.'s potential or available resources shrink in real terms or relative to development needs, management information will become even more important as a means to increase the efficiency of administering development assistance. Such information includes organizational and personnel data, inventories, budgets, obligations and other financial flows, contracts, etc., and is maintained in such computerized systems as RAMPS (for personnel), COORs (contracts), and others. Some version of these important systems have been established for a longer time than related development information systems (although they do not yet meet everyone's expectations or needs, as pointed out later). The information they generate is widely disseminated and used by the Agency. The absolute necessity for this type of data is not questioned.

Development information is found in the forms of personal experience, video tapes, oral histories, speeches, maps, project papers and program reports, evaluations, feasibility studies, technical studies and reports, evaluations, development strategy statements, and a myriad of electronic databases. This information can be obtained from individuals, private corporations, governments, A.I.D., the World Bank, UN agencies, the OECD, universities and a variety of other organizations. It is in constant demand. It is used by A.I.D. as a resource to be consulted because A.I.D. deals with great chunks of

human knowledge and activities--e.g., agriculture, education, health, industry, transportation, business, banking and finance, trade, national planning and policies.

Administrative and development information is a resource of considerable importance that is increasingly and continuously being tapped in the preparation and implementation of Agency plans, programs, and projects. It needs to be available constantly in a systematic, timely fashion. However, this degree of access to important information has not been achieved fully, in the past or today. In most organizations, including A.I.D., timely access by all personnel to the specific information needed to do their jobs well is a sought after, but never completely attained, goal. Optimum achievement of this target depends on a mix of factors--the value of the information to A.I.D., the cost of accessing it at the time and in the form most needed, etc.

For many years there were no well developed formal systems in US foreign aid agencies to acquire, keep, and utilize such important administrative and development information. Documents were filed haphazardly in office or personal files in Washington and abroad, or left with contractors and consultants. Valuable knowledge often was available only directly from experts.

Gradually, awareness of the value of better administrative and development information grew within some units of A.I.D. and systems were established to have it available for consultation. Specialized databases were developed to organize, manipulate and make more accessible key administrative data. Development information became better organized too. During the late 1960's and 1970's, A.I.D. undertook efforts to manage its development information more systematically. A key step was taken in 1975 with the approval of the "Information as a Tool in Development" project. This effort unified several ongoing information collection and dissemination programs within the central technical bureau. Another significant step was taken in 1984 with the creation of the Center for Development Information and Evaluation within PPC (PPC/CDIE).

There is some evidence that A.I.D. is not managing administrative and development information as systematically as many other companies and agencies. A.I.D. does not appear to be as far along in developing an overall system or network that enables useful or critically needed management and development information to be at the right place at the right time for decision makers. Montgomery Securities of San Francisco, for example, talks of "information weapons". Such weapons are advanced information systems that provide companies with strategic competitive advantages by directly increasing the productivity, flexibility, and responsiveness of individuals, work groups and entire organizations. At the center of this concept is a new era of software applications heavily networked, highly intelligent and operated by individual users. The technical foundation of this concept is found in

present corporate information networks<sup>5</sup> that already combine voice, text, image and data at the work places of each relevant employee (e.g., the Nomura Securities network in Tokyo).

Also, the preponderance of A.I.D.'s administrative and development information functions serve technical professional staff. More advanced systems constantly link top management with critical information that helps enable increased productivity, better management control and improved decision making at all levels of the organization in carrying out overall strategy.

Managers are usually interested in results and in enhancing their knowledge level to deal more successfully with their environment. The information top organization managers need includes:<sup>6</sup>

- o Comfort information--a few daily notes on the existing state of the organization;
- o Internal operations information--operating, financial, strategic, control and structural data;
- o Outside dissemination information--a report or speech to be provided by a key subordinate;
- o Progress information--data about levels of achievement or excellence in meeting goals, needs of clients or beneficiaries, or concerns of sponsors or supporters;
- o Problem information--about a crisis or important issue that deserves attention and is of interest until the problem fades;
- o External intelligence--type and level of progress of others, technological break-through, changes in external political or economic factors, demand shifts for products or services, new project ideas, propaganda by others;
- o Early warning information--trigger or alerting data about problems or issues; and
- o Decision making information--indicators of the factors supporting and not supporting changes in the situation being reviewed and pros or cons of the decision being considered.

Administrative information is usually, but not exclusively, found in categories 1, 2, and 8. Development information falls largely in the last five categories. Some development data is transitory and hard to

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<sup>5</sup>Arnold & Keller, "The Rise of the Information Weapon," Infosystems, June 1987, p.22.

<sup>6</sup>Jackson, Corporate Information Management, p. 17 citing "Tools for Building an EIS," EDP Analyzer, vol. 17, No. 12 (Aug. 1979).

provide effectively with computer technology (which tends to emphasize formal information sources and formats). Thus, information systems aimed at top management have to systematically integrate formal and informal information sources into one network design (which increasingly includes telecommunications and computer technologies).

A.I.D.'s present information system is not as efficient as it could and should be in providing information to its decision makers world-wide when they need it, including top management in Washington and in the U.S.A.I.D.s. Some A.I.D. administrative efforts, projects and programs are more difficult to undertake effectively as a result because personnel often are unaware of pertinent information, or much of it is not available in the right place at the right time in the right package, or they are not required to or choose not to consult it. Certainly such difficulties are overcome by A.I.D. staff on a daily basis. They do spend the time and energy necessary to obtain information considered essential to their work. However, if getting information becomes too difficult or time consuming, A.I.D. personnel choose to get by with what is available.

Enhanced management of information as a critical resource within the Agency will help overcome some of these difficulties, and this information needs assessment is an important first step by the Africa Bureau in that direction. An overall plan or strategy that focuses on administrative and development information as a resource and assigns responsibilities, obligations, and duties for managing it to all parts of the Agency will lead toward the improved management focus needed.

Acute awareness by A.I.D.'s top management of the value of information in its own right and as a means to increase the value of A.I.D.'s other resources in achieving development impact is vital in this era of declining budgetary resources. Timely use of more of the right information and better handling of information will enable more development to be achieved with each dollar of foreign assistance. Sanyo Securities Company in Tokyo, for example, uses an integrated information system, including artificial intelligence structures, to forecast market trends, project exchange rate fluctuations and generate investment advice. Its communications/computer system has reduced back office support requirements to less than one person per sales representative when most firms require two people to support each sales representative.<sup>7</sup>

Information systems in organizations evolve in complexity as increasing numbers of users are prepared to access data and information directly. This end user "computing" is rapidly developing in organizations--resulting in a shared environment in which end users program their own systems, enter and share data and have responsibility

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<sup>7</sup>Chorafas, Dimitris, "Is the Competition Ahead! Then Leapfrog Them," Computer World, July 20, 1987, p.57.

for their own applications.<sup>8</sup> Such activities are carried out mostly by staff who perform program duties independently of any main data processing group; yet many of their applications have important departmental or interdepartmental uses<sup>9</sup> and need to be disciplined by guidelines establishing appropriate languages, protocols, documentation, control procedures and support of such efforts. Many of these end users also want to be involved in the husbanding and management of the information relevant to their functions. These are healthy tendencies. They are reinforced by the dispersal of information technology in terms of personal computers and communications.

Computerized digital PBXs can interconnect telephones, micro-computers, voice mail and other equipment around the world. LANs can internally link computers, graphics devices, fax machines and even PBXs into integrated services networks, resulting in distributed information systems in which rapid user-to-user information transmission in voice, data, graphic and written form is possible. However, these tendencies toward the dispersal of information and functions throughout organizations usually puts a strain on existing information development and control structures. Organizations normally cope with this problem by adopting plans, policies, and management structures that emphasize lateral relationships, such as coordination, networking, technical interchange, liaison, etc., that fully support development of a disciplined and widely distributed information system that is highly responsive to the needs of information users, including top decision makers.

A.I.D.'s administrative and program related information system is evolving in this manner. There is ever increasing interest in, and use of, databases and computers (especially as younger personnel who are more "computer literate" join and rise in the Agency). As within USIS and as planned with the State Department's FAIS, end use computing and telecommunications are being more closely linked within A.I.D. as they already are in many corporate environments. The potential is great for building upon these and related circumstances to substantially increase the impact of all kinds of information on A.I.D.'s overall effort.

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<sup>8</sup>Whereas traditional centralized data center or time sharing environments in corporations usually continue their growth, the end user shared environment has been growing explosively in some. In one oil company, for example, end user computer growth reached 12 percent per month while traditional environments were growing at only 15 percent per year. See Jackson, Corporate Information Management, p. 10.

<sup>9</sup>See, for example, Spishak, Paul, "Program Decisions in AID: Using Automation for Management," Foreign Service Journal, Vol. 64, No. 3 (March 1987), pp. 22-23.

### III. INFORMATION IN THE AFRICA BUREAU: WHAT IS NEEDED, WHAT EXISTS AND NEEDS THAT ARE UNMET

Three key features of the information environment in the Africa Bureau are identified in this Chapter. First, by office and function, we identify and describe the information requirements of the Bureau. This analysis, participated in fully by many A.I.D. personnel in the Bureau, portrays what the Africa Bureau personnel say they actually need in the way of information. Second, we identify and describe the important sources of information (documents and electronic databases) used or possessed by the Africa Bureau to support its work. This analysis, again participated in by many Bureau staff, indicates what the key information is that the Africa Bureau already possesses or accesses. Third, we identify and describe the unmet information needs of the Africa Bureau. This analysis highlights areas where key information requirements are not being met fully in the Africa Bureau by information already available or nonexistent.

#### A. Framework for Identifying Information Needs

To assess information requirements of the Africa Bureau in a systematic way, we organized the operational work of the Bureau into functional areas. These functions were identified and agreed to jointly by the A.I.D. Working Committee and the Devres Team after different combinations were considered. The designated functions generally follow the work flow of the Bureau. As a result, some categories represent clear-cut and discrete areas of work, which are easily separable (Project/NPA Design and Implementation; Management and Administration), while others do not offer clear boundaries or overlap with other areas (Monitoring and Evaluation).

A series of processes or actions undertaken by the Bureau were identified for each function. Ultimately, these processes were generalized for all functions as: Initiate; review; approve; monitor; evaluate; report.

For each function and process, A.I.D. staff and Devres team members collaboratively identified key information needs to carry out that process and function. In defining information needs, an effort was made to be as practical as possible. We sought to specify the real information needed to carry out bureau's operational responsibilities. Needs which were either so general as to be meaningless or so specific as to be trivial were avoided.

The information needs for each function and process were developed by office. The office list used was:

AA - DP - Geog Off - PD - TR/MDI - MGT - CONT.

Geographic offices were considered together, since they perform parallel functions for a different grouping of countries and therefore have similar information needs. Many of the specific information needs

were identified from the questionnaires and individual interviews conducted by the team. To the extent practical, entries representing information needs were cleared with the offices carrying out the functions listed in the first column of Table 1.

This discreet identification of Bureau information needs or requirements, by function and office, resulted in a series of matrices which are presented in Annex 2. An example of the content of one of the matrices is shown in Table 1. In assembling these matrices the primary information needs of each office of the Bureau and of the Bureau itself were determined. Later in this chapter, we analyze these requirements to identify key information areas used by many offices and/or supporting many functions.

#### B. Description of Functional Areas and Key Processes

Following is a summary of each functional category and the major activities included under it. These functions, and their associated processes, are the major development activities of the Africa Bureau that need to be supported by information. Carrying out these functions requires at least a minimum amount of information, and carrying them out efficiently and with maximum development effect requires timely, high quality, carefully tailored information. Thus, they provide a framework for determining the key information requirements of the Bureau and, ultimately, for designing an improved information system that directly supports the overall development strategy of A.I.D..

Category No. 1, Policy and Program Planning, encompasses a variety of broad activities in the fields of policy and strategy planning at the bureau, sector and country levels. Activities cover the 1) Bureau Strategy process, 2) country strategies (CDSS), 3) Country Action Plans and 4) sector strategies, including Marketing and Investment and PVO strategies.

Category No. 2, Program Budgeting covers all aspects the budgeting and resource allocation process for the Bureau except for the OE budget, which comes under the Management and Administration category. Activities include 1) Bureau and country allocations and such processes as the AAPL planning exercise, the OMB submission, preparation of the OYB and the Congressional Presentation; 2) implementation of the OYB; and 3) monitoring of local currency.

Category No. 3 covers the design, implementation and evaluation aspects of project and non-project assistance (NPA). NPA includes sector program grants, commodity import programs, economic policy reform programs and cash transfers. Activities involve 1) a range of design action from scheduling through PID/PAIP approvals, 2) development of guidance for project and NPA design/implementation, 3) arrangements for PP/PAAD design and approvals and 4) implementation backstopping.

Category No. 4, Monitoring and Evaluation, presented the most difficult organizational problem, in that monitoring by definition

Table 1: INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	AA	BB	CC	DD	EE	FF	GG
<p>II. PROGRAM IMPLEMENTATION:</p> <p>1. Program/Country allocations: (a) A/R; (b) O/R; (c) O/R; (d) Congressional presentation</p> <p>Initiate</p>	<ul style="list-style-type: none"> <li>- Program budget strategy</li> </ul>	<ul style="list-style-type: none"> <li>- Pipeline/bridge stat</li> <li>- Country economic performance</li> <li>- Country strategies</li> <li>- Population figures</li> <li>- Historical aid levels</li> <li>- Country program performance</li> <li>- PL 480 levels</li> <li>- Program budget strategy</li> <li>- Country A/Rs</li> <li>- Budget level</li> </ul>	<ul style="list-style-type: none"> <li>- Same as DP above</li> </ul>	<ul style="list-style-type: none"> <li>- Program budget strat</li> <li>- Program performance</li> <li>- Country A/Rs</li> <li>- Pipeline/bridge</li> <li>- Proj design/auth schedule/status</li> </ul>	<ul style="list-style-type: none"> <li>- Obligation/expenditure reports</li> <li>- A/R level/budget strat</li> <li>- Rep/BI Pipeline/bridge</li> <li>- Rep/BI Program performance</li> <li>- Sector/tribute sector performance</li> </ul>	<ul style="list-style-type: none"> <li>- Program budget strategy - Planned personnel levels by country</li> <li>- Historical aid levels - Country A/Rs</li> <li>- Program performance - Country A/Rs</li> <li>- Country A/Rs/DNS</li> <li>- Pipeline/mortgage stat</li> <li>- Sector assessments</li> <li>- Other donor country data (levels, performance and evaluations/reports)</li> </ul>	<ul style="list-style-type: none"> <li>- Planned OE levels by country</li> <li>- Country A/Rs</li> </ul>
<p>Review</p>	<ul style="list-style-type: none"> <li>- Budget level</li> <li>- Country economic performance</li> <li>- Country program performance</li> <li>- PL 480 Levels</li> </ul>						
<p>Approve</p>	<ul style="list-style-type: none"> <li>- Same as above</li> </ul>						
<p>Monitor</p>							
<p>Report</p>							
<p>2. O/R Implementation</p> <p>Initiate</p>							

INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

OFFICE INFORMATION REQUIREMENTS

\*\*\*\*\*  
 Functional Categories and Activities  
 \*\*\*\*\*  
 AA  
 \*\*\*\*\*  
 DP  
 \*\*\*\*\*  
 Geog Off  
 \*\*\*\*\*  
 IT  
 \*\*\*\*\*  
 OIG  
 \*\*\*\*\*

\*\*\*\*\*  
 Functions of these activities  
 \*\*\*\*\*  
 - Bureau, country, and project budget levels - Date/amount of obligs  
 - Project PAGO  
 - Date/amount of obligs

\*\*\*\*\*  
 Reviewer/Unit  
 \*\*\*\*\*  
 - Status of obligations - Plan/Status of obligs - Plan/Status of obligs - Status of obligations  
 - GV/IN status - P/line/ortype stat - GV/IN status - Status of CV/IR - Status of CV/IR  
 - Deob/Prob status - GV/IN status - Deob/Prob/status - Status of Deob/Prob - Status of Deob/Prob  
 - Oblig by Target Level - Prob/Prob status - Project PAGO - Attributions by sector  
 - Budget Allowance Status - Expenditures by proj - Contract status  
 - Project evaluations - IDI prof expend (SARS)

\*\*\*\*\*  
 Report  
 \*\*\*\*\*  
 - To Congress: Predictions in funding for previous FY - Predictions in funding from previous FY  
 - To PIC: Status of obligs

\*\*\*\*\*  
 3. Local currency  
 \*\*\*\*\*  
 Unit  
 \*\*\*\*\*  
 - LC generalations/expenditures by country  
 - Type of LC expenditures by source/type  
 - LC generalations/expenditures by country  
 - Type of LC expenditures by source/type  
 - LC expenditures by type/sector  
 - LC trust funds for OE support  
 - LC trust funds for OE support

tends to occur throughout any process. While evaluations, especially project evaluations, traditionally come at prescribed points (e.g. project mid-term and final evaluations), this process is becoming less formal and the timing more flexible, as a continuous process of ongoing monitoring is now being emphasized, with regular reporting through the semi-annual Project Implementation Reports (PIRs). The alternative to making M&E a separate category was to integrate it into each of the other categories by adding monitoring and evaluation elements wherever appropriate throughout. Several committee members felt that the M&E function would tend to lose its identity if this were done, and it was decided to retain Monitoring and Evaluation as a separate category.

Category No. 5. Management and Administration, comprises the major elements of Bureau administration directed by the Management Office and AFR Controller. These include: 1) the formulation, review and approval of the OE budget and travel budget for the Africa Bureau and its field missions; 2) the assignment of personnel to positions in Washington and the field; 3) the Bureau's PAR/EER process; 4) management of the Bureau's information system, including equipment acquisition, data management and staff training; and 5) oversight of Bureau audit reports.

Category No. 6. External Relations; covers 1) Congressional relations and the legislative process; 2) coordination with the NGO/PVO community; and 3) coordination with international agencies (World Bank, U.N., etc.) and other donors, including a mutual exchange of information on assistance programs.

#### C. Common Information Needs of the Bureau

Many of the information requirements identified in Annex 2 are common to more than one office and/or function. That is, identical or similar information is needed by more than one office for the same function or is used by one or more offices in carrying out different functions.

Examples of these common information needs are: deob/reob status (used by DP GEOG Offices, P.D. and TR/MDI) to initiate OYB implementation and benchmark achievement for strategic objectives in the Bureau's action plan (used by DP and DD to review/monitor target performance). Each user of such common information may have a identical, similar or unique needs, depending on his or her role in the processes for which the information is being used. These varying requirements determine the characteristics common information must possess to satisfy users who are applying it in different ways or for specialized purposes. It is principally because information used in common does not have the characteristics to meet all users' needs-- e.g., timeliness, accuracy, level of aggregation or disaggregation, ease of access--that unmet needs exist and problems arise.

Grouping commonly used information helps determine the relative importance of each information unit by identifying the frequency of its use in carrying out the Africa Bureau's principal functions. The key characteristics required of the information in that unit can be defined

better when the purposes and users of the information are known. This definition will help in determining how the data in the unit can best be aggregated, organized, collected, labeled and disseminated to meet the needs of the Bureau. The significance of accessibility to the information by users other than the producer of the data can be determined more clearly when the users and purposes of the information are known. The mix of users may even affect which office is selected to produce and maintain the data.

Determining the commonality of information requirements, while helpful, is not sufficient to guide all information assessment or the design of a management information system. Identifying the perceived or actual importance of the information needed is also essential. For example, higher level information items, such as country economic data, will generally be used by numerous offices and for several functions. On the other hand, some very specific units of information, such as the date of a CN submission for a certain project, are of interest to the Mission and several Bureau offices, since the project cannot be authorized or obligated until the CN waiting period has expired. Thus, commonality needs to be combined with judgement as to the significance or importance of the information requirement to specific processes or the overall work of the Bureau.

#### D. Development of Clusters of Information Requirements

The next step in our analysis was to group the many information requirements of the Africa Bureau into clusters. We developed these clusters for two reasons. First, the individual information requirements of the Africa Bureau are legion and too numerous to analyze individually in this assignment. Some logical and useful aggregation of the requirements was necessary. Second, and much more important, an enhanced management information system in the Africa Bureau will be developed around blocks of related information which will enable improved information management and use.

Three basic criteria were used in determining information clusters. The most important was the logical cohesion of the information requirements. Economic data, allocations (OYB) and the other clusters contain information of similar or like kind. Frequently, but not always, the information is produced by or comes from the same or similar sources. Logically, the information in the cluster would be used for similar, although not identical, purposes. Second, our clusters included information requirements which served one or more offices. Third, the clusters frequently, but not always, included information needs common to one or more functions.

The information clusters developed are shown in Table 2. For presentation purposes, the clusters were grouped into four main headings--external/background, financial, personnel, and strategy, policy and program management. These headings are similar to the key functions the Bureau undertakes in doing its work. However, they are not synonymous. They are based on actual information uses as defined by users, not on the functional organization of the Africa Bureau. A sample information cluster is shown in Table 3.

Table 2: Clusters of Information Needs in the Africa Bureau of AID

External /Background

1. Economic
2. Sector/special interests
3. Private Sector
4. Other donor aid

Financial resources

5. Allocations (OYB)
6. Project Obligations and Expenditures
7. Local currency
8. Operating Expense Budget

Personnel resources

9. Direct hire personnel
10. Contract Personnel

Strategy, policy and program management

11. Agency and Congressional policy
12. Bureau review and approvals
13. Mission program management

Table 3: Sample information cluster  
Project Obligations and Expenditures

<u>Information Need</u>	<u>Needed For</u>	<u>Office Needed By</u>
Country Pipeline Status	OYB Implementation Process	DP GO
Country Obligation Status	OYB Implementation Process	PD TR
Proj pipeline/mortgage status	Address Imple. Problems	DP
	Undertake Cntry PIR Reviews	DP GO
	Sel. Incr. Funding Levels	DP GO PD
	Project Level Mission Evals	DP GO
	Country Action Plan	AA DP GO
Budget allowance status	OYB Implementation Process	DP GO
Brooke Amendment status	OYB Implementation Process	DP GO PD TR
CN/TN submission status	OYB Implementation Process	DP GO PD TR
Deob/Reob status	OYB Implementation Process	DP GO
	Address Imple. Problems	DP
Mission's pipeline record	Review, approval of PID/PAIP	PD
	Negotiate ProAg with HG	PD
Mortgage data	Authorization of PP/PAAD	DP
Expenditure by project	OYB Implementation Process	DP GO PD TR
Proj pipeline/mortgage status	OYB Implementation Process	DP GO PD
Dates of field authorizations	Authorization of PP/PAAD	PD
Timing info on field auths	Negotiate ProAg with HG	PD
Timely field obligation cable	Negotiate ProAg with HG	AA DP GO

#### E. Information Sources (What Exists)

The information requirements of the Africa Bureau are being supported by many different sources and kinds of information. These include documents, electronic databases, maps, oral histories, video tapes and personal experience. One of the most important sources of information for Bureau employees is personal knowledge passed along orally by colleagues.

As part of this assignment, the Devres Team inventoried the key documents and electronic databases depended upon by Africa Bureau personnel for their important information needs. A list of the documents identified is presented in Table 4. The documents list contains 78 sources of information. These range from generic documents such as CDSSs, Action Plans, ABSs and PPs which are used in every country program in the Bureau to specific documents such as "Minisis in U.S.A.I.D.--Now and Future." In many cases, documents are produced from electronic databases. Where this was obviously the case, we have included the electronic database as the source of the information rather than the document(s) produced from the database. Of the documents listed, 41 percent are produced within the Africa Bureau, either in Washington or by U.S.A.I.D.s. A.I.D. itself produced all the documents on the list. Key documents produced outside A.I.D. include the Foreign Assistance Act, OMB's budget guidance, State Department policy papers and speeches and various documents from other donors and developing countries.

The electronic databases currently being used to support Bureau activities are presented in Table 5 and in detail in Annex 4. The list includes 127 electronic databases. Those databases with an asterisk are major one containing a larger volume of information. All key, frequently used, databases brought to the attention of the Devres Team are included. Numerous external databases sometimes used by the Africa Bureau via CDIE are not listed in Table 5. These external commercial databases are available to Bureau staff but are seldom accessed by them directly. Data sheets describing each database were prepared by the Devres Team. A completed example of one of these data sheets is shown in Figure 1. Annex 4 includes a data sheet for each database. All the data sheets plus an actual example of the output of each database is available in a large notebook included in the working files supporting this report.

A substantial majority (69 percent) of the electronic databases used by the Africa Bureau are produced by it as well. These databases are used primarily by Africa Bureau personnel. Of the databases produced outside the Africa Bureau, most are products of other Bureaus in A.I.D.. For example, the African Bureau uses numerous key A.I.D.-wide databases such as COORS, RAMPS and PAIS. In addition, some A.I.D. offices have contracted with institutions to manage datasets for them. The Development Information System, which accesses bibliographic information on A.I.D. project documents, evaluations and technical reports is an example. Other examples include the population databases maintained by John Snow, Inc. for S&T/POP.

TABLE 4

## Key List of Documents and Reports by Producer

<u>Name</u>	<u>Source</u>
Project Control Register	ANE
Briefing Book	DP/PAB
Annual Budget Submission FYxx	DP/PAB
Congressional Presentation FYxx	DP/PAB
PL480 Title I/III Country Justifications	DP/PAB
Approved Assistance Planning Levels (AAPL)	DP/PAB
FYxx Deobligation/Reobligation Requirements	DP/PAB
Obligation Schedule Cable	DP/PAB
Request for Budget Allowance	DP/PAB
Executive Contact List for PVOs	FVA/PVC/IPS
Introducing MDI	MDI
Manual for Action in the Private Sector	MDI
Private Sector Strategies	MDI
Regional Trade & Economic Cooperation in S.Af.	MDI
Country Invest. Climate Assess. & Priv. Sect. Survey	MDI
OIS Equipment Office Location List	MGT
Action Plan	Mission
Annual Budget Submission (ABS)	Mission
Concept Paper	Mission
Country Development Strategy Statement	Mission
FYxx Private Sector Rehabilitation PAAD	Mission
Auction Program Support - PAAD Amendment	Mission
Mission Reporting OE Obligations cable	Mission
PFAR Cable Report	Mission
Program Assistance Approval Document (PAAD)	Mission
Project Identification Document Facesheet (PID)	Mission
Project Implementation Report	Mission
Project Paper	Mission
Small Country Strategy Statement	Mission
A.I.D. Automation Review List	M/SER/IRM
Automated Inventory Management System	M/SER/IRM
How to update CONDOR Files	M/SER/IRM
Main Frame Systems	M/SER/IRM
Action Memorandum for the AA/AFR	PD
PIR Summaries	PD/EAP
Document Tracking Report	PD/IPS

Summary of [regional] PIRs	PD/SAP
FIR Reporting Cable	PD/SAP
Project Authorization	PD/SAP
PAAD (PP) Reporting Cable	PD/SAP
PAIP (PID) Reporting Cable	PD/SAP
Program Assistance Approval Document (PAAD)	PD/SAP
Issues Paper	PD/SWAP
A.I.D. Res and Dev Abstracts	PPC/CDIE
A.I.D. Dev. Info. Center Manual	PPC/CDIE
COM Indexes: A.I.D. Project Reports	PPC/CDIE
COM Indexes: A.I.D. Technical Reports	PPC/CDIE
Development Experience Abstracts	PPC/CDIE
Directory of Dev. Info. Network	PPC/CDIE
Evaluation Occasional Papers	PPC/CDIE
Evaluation Report Acquisitions List	PPC/CDIE
FY87 PPC/CDIE Information Service Stats	PPC/CDIE
Management Assessment: PPC/CDIE	PPC/CDIE
Minis in USAID -- Now and Future	PPC/CDIE
PPC/CDIE Briefing Portfolio	PPC/CDIE
Program Evaluation Discussion Paper	PPC/CDIE
Program Evaluation Report	PPC/CDIE
Project Impact Evaluation Reports	PPC/CDIE
Research and Reference Services	PPC/CDIE
Research and Reference Service Monthly Report	PPC/CDIE
Special Bibliographies	PPC/CDIE
Technical Report Acquisitions List	PPC/CDIE
Doc. and Info. Handling Facility monthly report	PPC/CDIE
A.I.D. Thesaurus	PPC/CDIE
Evaluation Special Study	PPC/CDIE
Program Design and Evaluation Methodology Report	PPC/CDIE
FYxx Approved Assistance Planning Levels cable	PPC/PB
Policy Papers	PPC/PDPR
Policy Determinations	PPC/PDPR
Briefing Paper	SWA
Country Fact Sheet	SWA
ARD Operating Procedures	TR/ANR
FEWS Country Report	TR/ANR
Indicators for Tracking AFR Bureau's Progress	TR/ANR
Plan for supporting Ag Research...in Africa	TR/ANR
Ag. & Rural Dev. Functional Review FY80-89	TR/ANR
Projects which contrib. to the Ag. Prod Strateg	TR/ANR
HPN Happenings	TR/HPN

Table 5. EXISTING ELECTRONIC DATABASES BY PRODUCER

<u>Name of Database (or Report)</u>	<u>Acronym</u>	<u>Producer</u>
Population Information Program	POPLINE	Census
OE Monthly Obligations		CONT
Budget Analysis	ABSREV	CONT
Operating Expense Summary		CONT
African Bureau Travel		CONT
Monthly Comparison of OE obl vs bud		CONT
ABS Comparison		CONT
AFR FYxx ABS Submission		CONT
Obligation Plan FYxx		DP/PAB
CP vs OYB Comparison Table		DP/PAB
DA/ESF Country Allocations		DP/PAB
Dev Assist. Country Alloc		DP/PAB
ESF Oblig by Category		DP/PAB
AID/W Allow/Reserv/Oblig		DP/PAB
Econ Support Fund Apportionment	ESF Appor	DP/PAB
Non-Proj/Sector Asst for SSAFR		DP/PAB
FYxx Sector Attributions		DP/PAB
Obligation Priorities/Allowance		DP/PAB
AFR Regional Projects		DP/PAB
Non-proj Asst for DFA		DP/PAB
A102AF OYB		DP/PAB
ESF NPA by Sectors		DP/PAB
Deob/Reob Status Report		DP/PAB
Annual Budget Submission (Table 4)	ABS	DP/PAB
Pipeline Reports		DP/PAB
Local Currency Expenditures		DP/PAB
Est. Avail Funds by Appopr & BPC		DP/PAB
East Africa Program & Project Info		DP/PAB
Foreign Exchange System		DP/PAB
Congressional/TN Log		DP/PAB
CN/Reduction in Funding		DP/PAB
AFR Legislative Update		DP/PAB
AFR Legislation 99th Congress		DP/PAB
SSA/DA/EAC Country Allocations		DP/PAB
Summary of Active and Proposed Projects (CP)		DP/PAB
Country Basic Data	CBDATA	DP/PAB
Country Master File	CMFILE	DP/PAB
Indicators of Econ. Policy Perform.		DP/PAB
Total Debt Service to USG-Sub-Sahar	AFRDEBT	DP/PAB
Total Debt Svc to USG-Sub Sahara	TDEBT	DP/PAB
Debt svc to USG by Indiv SubSaharan	DEBT	DP/PAB
Country Status File	CAT3	DP/PAB

<u>Name of Database (or Report)</u>	<u>Acronym</u>	<u>Producer</u>
ODA Commitments (DAC bilat & multi)		DP/PPE
Dun & Pradstreet Credit Service	D&B	Dun & Bradstreet
FVA Program Support Summary		FVA/FFP
PVO Registry		FVA/PVC
Int. Dev. Research Ctr Database	IDRC	IDRC
World Bank database	WB	IBRD
World Development Indicators		IBRD
Sector Assist. Report Sys (proposed)	SARS	MDI
On-board staff & space report		MGT/HRM
Mission Accounting Control System	MACS	Mission
Proj Implementation Rpt	PIR	Mission
Food for Peace Activities		Mission
Programmed OYB; Unobligated Balance		M/SER/IRM
Programmed OYB; Implementation Plan		M/SER/IRM
Contract Info Mgt System (designed)	CIMS	M/SER/OP
Contracting On-Line Reporting Sys	CCORS	M/SER/OP
Boss Data Base	BOSS	M/SER/OP
Consultant Registry Info Sys	ACRIS	OSDBU
Gray Amendment Analysis		OSDBU
Proj Imple Report Tracking System	PIRTS	PD
Gray Amendment Contracting FYxx		PD
AFR Project Tracking System	AFTRAK	PD/IPS
Proj Data Inventory	AFTRAK	PD/IPS
Obligations Activity Report	AFTRAK	PD/IPS
Auth. Activity Report	AFTRAK	PD/IPS
Mortgage Report: Proj & Non-Proj	AFTRAK	PD/IPS
Project and NPA Pipeline Expenditure	AFTRAK	PD/IPS
Document Tracking System	DTS	PD/IPS
PIO/C and PIO/T by fiscal year		PD/IPS
New Proj in Progress for AID/w auth.		PD/IPS
Source Waiver Totals	SOWUR	PD/IPS
FYxx Ammendments, New Starts and Shelf Items		PD/IPS
Project Implementation Reviews	FIRS	PD/IPS
PIR Summaries		PD/SAP
Allotment Flash W-208	FLASH	PFM/FM
Project Accounting Information Sys	PAIS	PFM/FM
Financial Accounting Control Sys	FACS	PFM/FM
Appropriation Allotment Rpt	FACS	PFM/FM
Completed Proj Assist & Activ	FACS	PFM/FM
Country Financial Report	FACS	PFM/FM

<u>Name of Database (or Report)</u>	<u>Acronym</u>	<u>Producer</u>
Rev Auto Manpower & Pers Sys	RAMPS	PFM/PM
Foreign Assignment System	RAMPS	PFM/PM
AID Alpha Employee List	RAMPS	PFM/PM
Staffing Pattern	RAMPS	PFM/PM
Position AOSC List	RAMPS	PFM/PM
FS List by backstop, degrees	RAMPS	PFM/PM
Locator Report	RAMPS	PFM/PM
Categorization of ESF-OBL (estimates)		PPC
OYB		PPC
STOYB		PPC
PAIS		PPC
Flash		PPC
RAMPS		PPC
COORS		PPC
ACCT		PPC
TAB 4		PPC
TAB 8		PPC
TAB 9		PPC
TAB X		PPC
AVD		PPC
DBI		PPC
Development Information System	DIS	PPC/CDIE
Projects Database	DIS PROJECTS	PPC/CDIE
Documents Database	DIS DOCUMENT	PPC/CDIE
Project Authority File DB	DIS PROJAUTH	PPC/CDIE
Special Proj on AFR AGR RES	DIS SPAAR	PPC/CDIE
Women in Development Database	DIS WID	PPC/CDIE
Catalog		PPC/CDIE
AFRBRD		PPC/CDIE
Asia and Africa Dev Bank DB	DIS BANK	PPC/CDIE
Microcomputer-based Dev Info Sys	MICRODIS	PPC/CDIE
Economic & Social Database	ESDB	PPC/CDIE
Approved Assistance Planning Levels		SA
OYB FYxx		SA
Obligation Schedule		SA
AFR/SA Obligations		SA
Actual & Est Obligations in SADCC		SA
Attributed Cost Pop CAs by FY	CACOST	ST/POP
Tracker for IPPF Projects	IPPF	ST/POP
Tracker for In-country pop act	PPD	ST/POP
Tracker for UNFPA projects	UNFPA	ST/POP
Country demographic variables	WDS88	ST/POP
Sahel FYxx OYB tracking schedule		SWA
On-board Staff + Space		SWA

<u>Name of Database (or Report)</u>	<u>Acronym</u>	<u>Producer</u>
Worldwide Exp/Obl & Pipeline Info		TR
FY89 CP data	CP89	TR
FEWS: Famine Early Warning System		TR
Travel Funds Monitoring System		TR
PL480 Recipients 1969-86	PL480	TR
Project data from mainframe	MFDTA	TR
ANR Obligations from DFA		TR/ANR
Management Information System		TR/ANR
Functional Information System	FIS	TR/ANR/PA
Consultants Roster		TR/ANR/PA
AIDS Reported Cases to WHO	AIDS	TR/HPN
AIDSA & AIDSB		TR/HPN
AIDSDAT		TR/HPN
Cereal Production in MT	CEREALS	TR/HPN
AFR Health Project Data	HPD	TR/HPN
Midyear Population Ests. 1969-86	AFRPOP	TR/HPN
Demogr. & Health Indicators	AFTRENDS	TR/HPN
Working Budget by HPN project	ABS	TR/HPN
Personel Database	PERSONNEL	TR/HPN
PIR System		TR/HPN
Obligation Performance Report		TR/PRO

Figure 1: Sample Data Sheet for Electronic Databases

EXISTING DATABASES

Data Base Name; Producing Office; ID:

Operating Expense Summary (FY89OE); AFR/CONT; 3

Description:

Data Contained:

Control:

Manager: Michael Rogal, AFR/CONT, phone 647-8365

Developer: Michael Rogal, AFR/CONT, phone 647-8365

Hardware; Software; Accessibility:

Source Documents; Reporting Frequency; Issuing Office:

1. Monthly Obligation Cables; Field Missions

Usage/Reporting; Frequency; Distribution:

1. Mission Allowance Cables Quarterly; All Field Missions.
2. Advice of Budget Allowance Quarterly; FM/CAD-AFR/CONT prepares them and FM/CAB authorizes and issues.

Related Data Bases; Producing Office:

1. FY Budget Analysis; yearly; AFR/CONT

Update Schedule Achieved:

Quarterly

Comments:

A relatively few databases used by the Bureau are produced entirely outside A.I.D.. These include the World Bank database (WB), Dunn and Bradstreet Credit Service (D&B), the Population Information Program (POPLINE) and various databases from Canada's International Development Research Center (IDRC). CDIE, working on behalf of Africa Bureau personnel, frequently tap into these and a wide variety of additional commercial, bibliographic, business and directory databases external to A.I.D. to obtain needed information. Some individuals in the Africa Bureau also access certain of these same databases.

Many of the electronic data sets identified in this assignment reproduce specific tables from existing Agency or outside documents. For example, a person may keep an electronic version of a specific table from a Mission ABS submission. The "database" is used to keep track of modifications in numeric data as the programming year evolves. The majority of the Africa Bureau's informal data sets is kept on Lotus. Most are created by those requiring the data for specific purposes, especially to monitor and easily report numeric data. Almost always, these informal databases are shared and contain data more up-to-date than that in official agency databases. Frequently, these informal data sets present information in a different way than the official Agency databases.

In addition to the numeric data contained in databases produced or used by the Africa Bureau, some users keep textual material. For example, lists of firms which meet certain criteria, such as Gray Amendment Status, are kept. Lotus spreadsheets may also contain some textual information. Project completion dates or comments on specific numeric data are examples.

#### F. Unmet Information Needs

The ultimate measure of good information is its value to individual users in fulfilling a particular purpose. To be useful, information must be timely, accurate, complete, and specific to the function. It must also be available and easily accessible. From an efficiency perspective, it should be non-duplicative. These traits are interpreted by the user. The usefulness of information diminishes to the extent it does not meet the user's definition of these characteristics. Information can be less useful because the sources themselves are poor, the methodology for collecting the information is incomplete, or the needs of the users are dissimilar.

To identify possible inadequacies in the Africa Bureau's information environment, we asked a substantial number of Bureau staff to identify areas where their important information needs were not being met fully. These unmet information needs were collected from four sources:

- o Responses to the questionnaires, which posed the question of unmet needs;
- o Team interviews with more than 40 Bureau staff members;

- o Memos directed to the team by those who wished to emphasize special problems with obtaining certain kinds of information; and
- o Observations of the Devres team of information needs of African Bureau staff persons.

Personnel within the African Bureau indicated that a wide variety of unmet information needs exist. Over 200 specific unmet needs were reported to the Devres Team. These are listed, by information cluster, in Annex 5. A synopsis of the most important of these unmet needs is presented in Chapter IV where they are analyzed. A sample of these unmet needs, as reported by Africa Bureau personnel, is shown in Table 6 for one information cluster. Needs listed as unmet are often based on information which clearly exists and which should, at first glance, be available to users. However, the high degree of frustration expressed by users in obtaining routine data to perform standard, high priority work indicates that the efficacy of information sources cannot be taken for granted.

There is no single reason why a particular information need might be viewed as unmet. It is rare that the information simply does not exist, although in some cases great effort would be necessary to obtain and analyze it. However, there are numerous cases in which information is simply not available, thereby leaving an information "gap".

Generally, however, an unmet need arises from an information requirement which has been only partially met. This partial meeting of needs can arise in many ways. For example, the producer of information is usually the primary user of the information also. Such a producer/user will find the particular information produced useful, while others using the information see it as inadequate. This inadequacy may result when secondary users seek to apply the information to another, slightly different, purpose. They may require more accuracy, timeliness, or detail than the producer/primary user. As another example, a difference in training or initiative may enable one user to meet his or her information needs and another cannot.

In making this analysis we characterized unmet information needs as (1) data exists, but some characteristic of the producer, user or information creates an unmet need related to the data, and (2) data was not available. Specific reasons for unmet needs in Category (1) included: User was unaware of the data; information was out of date, incomplete, inaccurate, too aggregated, too detailed, unsuitably defined, untimely, or hard to access; or the information consisted of controlled/sensitive data that could not be accessed when needed.

Reviewing the totality of unmet needs reported by Bureau staff at both the operating and executive levels indicates that accessibility to existing information is the greatest constraint. Put in its most simple form, people know or believe the information they need exists, but it is not organized or made available to them in a form which makes it easily accessible and most useful. Most Africa Bureau staff are busy and frequently under explicit and severe time deadlines. These

Table 6: Key unmet information needs  
Project Obligations and Expenditures

KEY UNMET NEEDS

Pipeline analysis including liquidity rates  
PAIS not current enough  
Non Project Assistance not in PAIS  
Obligation status not current  
Sector breakdowns of portfolio not complete

Expenditure data not current  
FLASH: too aggregated  
Project authorization dates and amounts out of date  
Accurate, updated W-214  
LOP not in PAIS  
PACD often not current

UNMET NEEDS  
REASONS AND IMPLICATIONS  
FOR EFFICIENCY, EFFECTIVENESS, AND DESIGN

Clusters	Unmet Needs	Reasons	Implications for Efficiency/Effectiveness	Implications for Design
<b>External/Background:</b>				
Economic	Economic country profiles, incomplete or not available in summary form	Lack of user training in accessing databases	Incomplete data for project planning and decision-making	Design of user training and outreach mechanisms
		User lack of knowledge of available sources		Categorization of sources and distribution
Sector/Special Interests	Lack of country economic performance data (gap)	Sources incomplete and untimely		Identification of key data and sources
		Statistics on agriculture production incomplete and untimely; not available by country/region (gap)	Source data difficult to obtain; incomplete, and untimely  Multiple sources	Time spent gathering up-to-date information via direct contact with Missions  Decisions made without adequate information
	Food Aid data difficult to obtain	Inconsistent reporting	DI 480 monitoring difficult with impact on food aid planning	User/producer interface in FVA database design
		Database not available (being designed)		
	Sector performance data (AIDS, child survival) by country	Sources not available or too aggregated	Targeted planning less effective	Identification of key data and sources  Level of aggregation required
Business	Scattered external data, as yet uncollected and organized for use	Multitude of sources	Lack of information increases business risk and decreases investment potential	Identification of key data and sources
		Newness of office		
	Lack of reliable data	Lack of local infrastructure to collect data		

Table 7: Unmet needs, reasons and implications for efficiency, effectiveness, and design

UNMET NEEDS  
REASONS AND IMPLICATIONS  
FOR EFFICIENCY, EFFECTIVENESS, AND DESIGN

Clusters	Unmet Needs	Reasons	Implications for Efficiency/Effectiveness	Implications for Design
Other Donors	Information on donors incomplete and out-of-date; lack of qualitative data (gap)	Degree of donor cooperation and coordination inadequate. Source outside Bureau	Duplication of efforts and less efficient use of resources	Formal/internal mechanisms for interface and feedback
Financial:				
Allocations and OYE	Information too aggregated and not current  CN/TN status not readily available	Producer (F) not user  Nor formal feedback mechanisms  Multiple users/users	Unreconciled cuff records  Double attribution  Difficulty in monitoring Congressional earmarks  Additional staff time involved in developing relevant information  Allocations decisions delayed	Development of producer/user interface  Level of aggregation required  Cost/benefit of lowest common denominator  Level/means of user access and training needs
Project Obligations and Expenditures	PAIS report untimely, and incomplete	Producer not user  Bureau not client  No formal feedback mechanism  Untimely source/processing	Time spent in gathering current information  Various sources leading to differing figures  Management frustration over "inaccurate" data	Formal/informal mechanisms for interface and feedback  Decision on appropriateness of PAIS for certain kinds of information

Table 7: Unmet needs, reasons and implications for efficiency, effectiveness, and design

UNMET NEEDS  
REASONS AND IMPLICATIONS  
FOR EFFICIENCY, EFFECTIVENESS, AND DESIGN

Clusters	Unmet Needs	Reasons	Implications for Efficiency/Effectiveness	Implications for Design
	Pipeline information incomplete without aging	No producer Primary source (PIE) not standardized re pipeline aging	Peob/reob and budget reallocation opportunities missed Poor flagging of pipeline problems	for reporting Information standards for reporting Assignment of responsibility for producing
Local Currency	More information on sources and users with breakdown by sector	Producer/user interface	Monitoring of local currency sources and uses	Formal/internal mechanisms for interface and feedback
OE Budget	Additional detail, increased opportunity for manipulation and analysis	Source too aggregated for required analysis	Less efficient planning for on-going operations	Level of aggregation required Cost/benefit of lower common information denominator
<b>Personnel:</b>				
Direct Hire Personnel	Information untimely, incomplete, with limited accessibility; lack of data on special experience by sector (gap)	Restricted source outside Bureau Producer/user interface Untimely update of by producer	Less efficient/effective allocation of human resource Duplication of effort	Differentiation between confidential and public information Formal/internal mechanisms for interface and feedback
	Travel schedules incomplete, inaccurate, and untimely	No producer for lower level staff Access to on-line information	Lost opportunities for contact and exchange of information at limited cost	Information standards for reporting Level/means of user access and training needs

Table 7: Unmet needs, reasons and implications for efficiency, effectiveness, and design

UNMET NEEDS  
REASONS AND IMPLICATIONS  
FOR EFFICIENCY, EFFECTIVENESS, AND DESIGN

Clusters	Unmet Needs	Reasons	Implications for Efficiency/Effectiveness	Implications for Design
Contract Resources	Incomplete information and cannot be compared between Missions	Data collection not standardized  Source incomplete	Less efficient/effective Identification and targeting of human resources outside Bureau  Monitoring of compliance with Gray amendment hindered	Information standards for reporting  Identification of key data and sources
Strategy, Policy and Program Management:				
Agency and Congressional Policy	Current information on legislative actions affecting Bureau	Distribution	Additional time spent conforming programs to legislative/Agency priorities	Level/means of user access and training needs  Development of producer/user interface
Bureau Review and Approvals	Current evaluation information	Distribution of reports not systematic  Qualitative information difficult to access	Less effective monitoring of ongoing projects and planning for future projects	Development of producer/user interface  Cost/benefit of abstracting information
	Information difficult to access	Multiple sources	Time spent in gathering data from various sources	Level/means of user access and training needs  Centralized/decentralized information
	Information not accessible	Lack of user training to access sources	Time spent in gathering data  Decisions made on incomplete information	Level/means of user access and training needs  Cost/benefit of abstracting information

Table 7: Unmet needs, reasons and implications for efficiency, effectiveness, and design

UNMET NEEDS  
REASONS AND IMPLICATIONS  
FOR EFFICIENCY, EFFECTIVENESS, AND DESIGN

Clusters	Unmet Needs	Reasons	Implications for Efficiency/Effectiveness	Implications for Design
	Cable information difficult to access	Volume of cables  Cables not systematically organized by subject	Time spent in searching for relevant cables	Level, reach of user access and training needs
Mission Program Management	Country program impact data not available on systematic basis (gap)  Inadequate country program performance data (gap)  Lack of NPA implementation status and impact (gap)	Not collected systematically  Information difficult to quantify	Program decisions not as effective because of information gaps	Cost/benefit of abstractly innovative reporting standards

Table 7: Unmet needs, reasons and implications for efficiency, effectiveness, and design

circumstances do not always permit extensive searches for specific pieces of information. Many people noted they work around this problem by doing the best they can with the information at hand or easily accessible from regular sources. The result, they claim, is that they frequently use data which they know is out of date, incomplete, inaccurate, too aggregated or too detailed for the purpose at hand, or not grouped properly.

This "accessibility" category of unmet information needs is very large, as the data in Annex 5 show. Considered from the vantage point of information as a increasingly important resource, the existing information environment is somewhat comparable to a personnel system that fills various Bureau positions with staff whose skills are out of date, incomplete, too refined, or otherwise inadequate. The Agency has tried hard to make certain this does not happen in the personnel area by seeking to match the correct direct hire or consultant with each job.

Information organization and management in the Bureau, already an ongoing exercise, can be enhanced in the same way as can personnel or financial management to improve the impact of the information resource on achieving Agency objectives. Given the extent and nature of the unmet needs in this broad category of accessibility, there is both need and potential to improve the information environment within the Bureau and, through such improvement, to bring about greater productivity of already available Bureau resources.

Africa Bureau staff also pointed to some important information gaps--areas where data needed or desired by them were not available--which create important unmet information needs. Key gaps cited included:

- o Country and regional performance and trend data (e.g., social, economic, political, environmental);
- o U.S.A.I.D. program effectiveness and impact by country and region;
- o Aggregate program by sector data;
- o Aggregate information on food-aid and food needs for planning;
- o Personnel data on special experience by sector (e.g., drought, locusts, etc.);
- o Sector/special interest performance data (e.g., A.I.D.S., small business by country and region; and
- o Qualitative information on other donor assistance.

While the number of gaps cited in Annex 5 are not as extensive as those noted in the accessibility category above, they are of pivotal

importance to the Bureau. They go to the heart of trends in Congress and the Agency to document country-wide, regional, and sectoral development progress and to improve management of A.I.D.'s total resources. To close these gaps will require a clear understanding of what is needed, resource allocation--especially at the Mission level--toward obtaining the information, and enhancement of the existing information system to organize and make the information available to Bureau and other A.I.D. staff and executive officers.

G. Analytical Framework for Analyzing Unmet Needs

An appropriate analytical framework for assessing unmet information needs is to view information through the prism of purposes, users, producers, and sources (see Figure 2). These four basic elements form a tiered framework with purpose being the overall driving force, followed by users and producers. The source of the information provides a base for the framework. In a single user system, information is produced from defined sources, for a particular function, for a specified user. The user and producer are often the same. Relationships are well-defined and the quality of the information is dependent primarily on the quality of the source and the producer. There is only one user perspective. When a system becomes multi-user, relationships become more complex, and the quality of the information becomes much more dependent on the perspective of the various users.

In Chapter IV, which follows, key unmet information needs of each information cluster identified in this Chapter are analyzed to determine the nature of the unmet need, the reasons for it and the implications of the unmet need for Bureau performance and improved management information systems design. This analysis of unmet needs is undertaken in the context of the overall information requirements of the Bureau as set out in Annex 2. That is, the functions, processes, Bureau offices and information requirements for each information cluster provide the backdrop for the analysis of unmet needs for that cluster. The analytical framework of purposes, users, producers and sources noted above is used in analyzing unmet needs for each cluster.

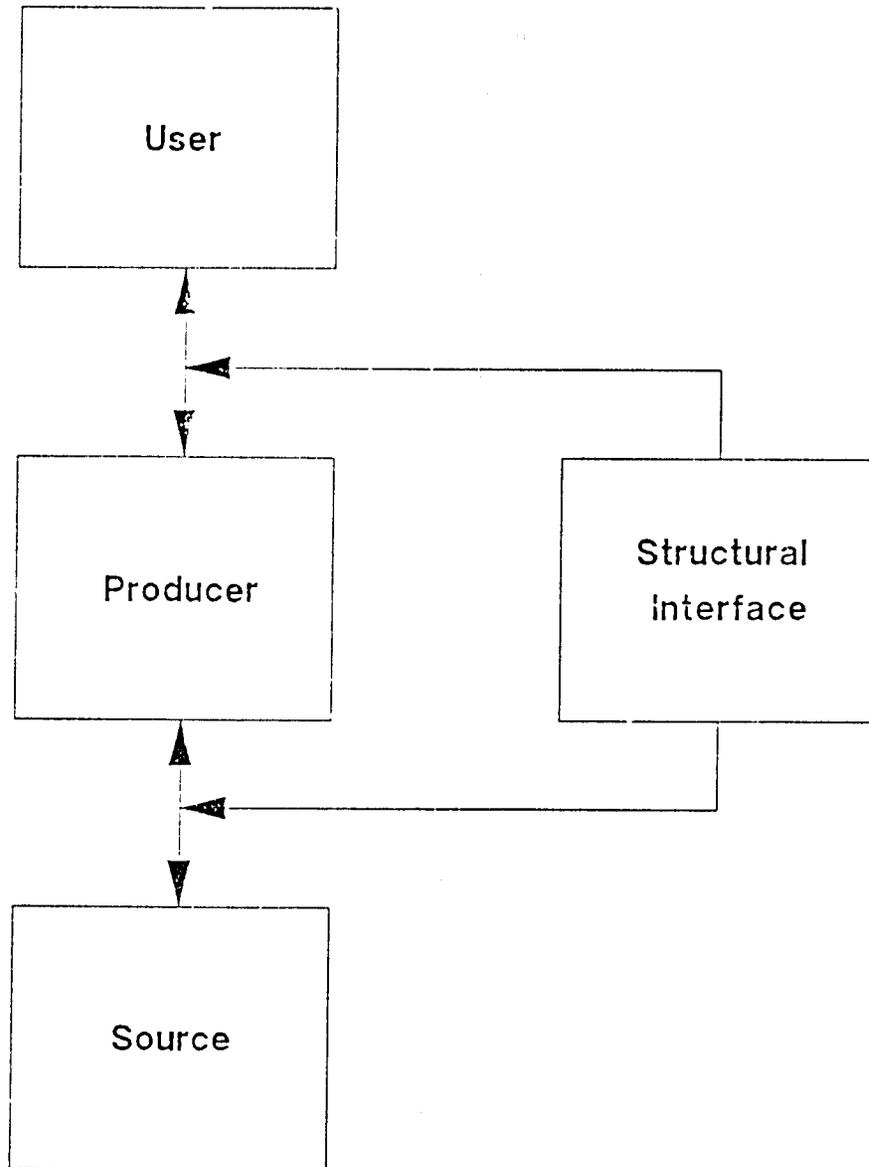


Figure 2: Information System Interfaces

## IV. ANALYSIS OF INFORMATION CLUSTERS

### A. Overview of Clusters

In the analysis of the thirteen clusters, six clusters emerged as being high priority because they had high levels of unmet needs. (See Figure 3.) Other information clusters are important to the overall functioning of the Bureau but, apparently, people have less trouble getting information in those clusters.

Of the six priority areas, five are a problem because the Bureau must get information from outsiders--from other Bureaus within A.I.D. or from organizations such as the World Bank. Interviewers claimed there are few problems getting information from the Missions. It may be easier to get information from Swaziland than it is to get it from Rosslyn. The sixth priority cluster focuses on the Bureau itself. This is information both generated and used within the Bureau for the review and approval process.

At the end of this section, the seven information clusters with low unmet needs are discussed, though in less detail than the high priority clusters. A complete list of all information needs, the functions the information services within the Bureau, current information sources (databases and reports) and unmet needs is given in Annex 5. Table 7 provides an overview of unmet needs by clusters, reasons, and implications for efficiency, effectiveness, and design.

### B. Analysis of Clusters with Major Unmet Needs

#### 1. Cluster: Project Obligations and Expenditures

##### a. Description and Sources

This cluster of information enables the Bureau to monitor the financial status of Missions, programs and projects. It includes information on project pipelines, mortgages, and funds which have been moved from one project to another (deob/reob). Current and accurate obligation and expenditure data are very important in making the best use of limited budget resources. Poor information in this area can result in lost opportunities to reobligate money for Agency priorities. This information is used primarily to implement the OYB and as an indicator that Mission activities are proceeding on schedule. Further detail on specific information in this cluster is presented in Figure 6.

The information in this cluster comes from numerous sources--the AFR Project Tracking System, the Project Account Information System, the Obligation Performance Report and others noted in Figure 6. Over twenty existing databases are maintained by various offices within the Bureau, but primarily PD/IPS and DP/PAB. The PAIS and the FACS, both produced by FM, are the major reports produced outside the Bureau in this cluster. (See Annex 5 for specific databases).

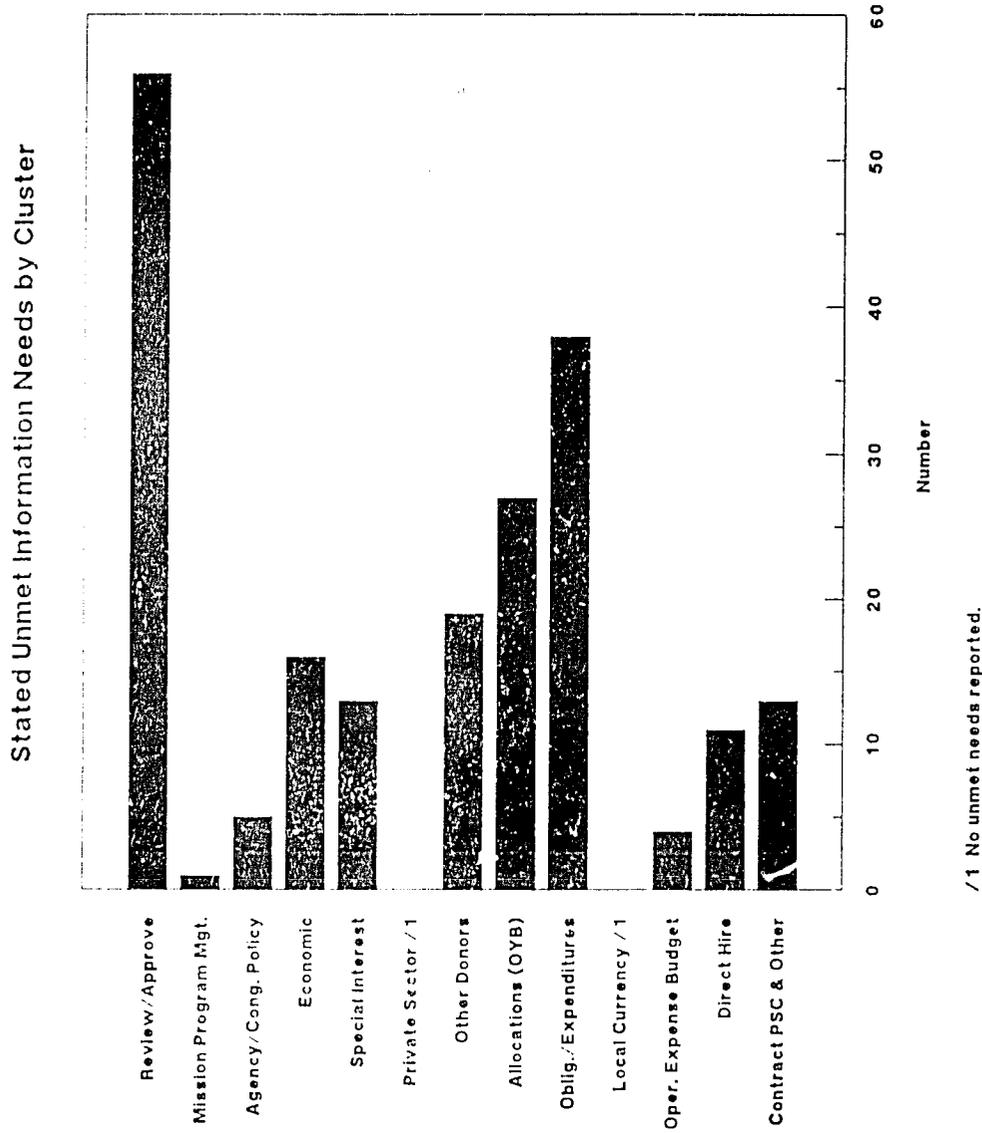


Figure 3: Stated unmet information needs by cluster

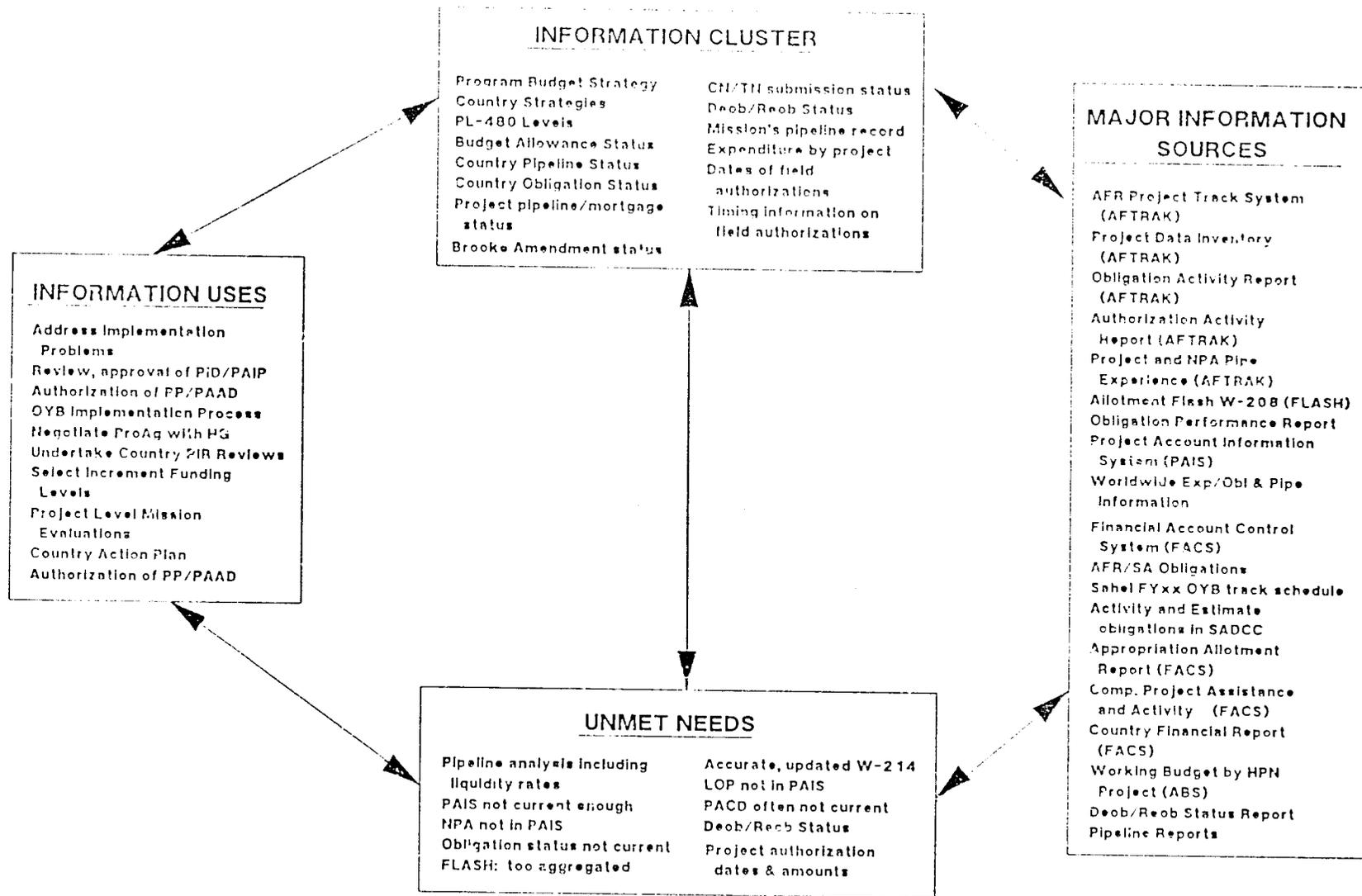


Figure 4: Cluster -- Project Obligations and Expenditures

The primary source of information is the Missions. It comes to A.I.D./Washington by cable and, quarterly by U101 reports to FM. In particular the PAIS report relies on U101s which are used by the Missions to report their expenditures. U101 forms arrive at FM in a continuous stream as funds are expended but are supposed to arrive no later than the first of the quarter. Because FM enters the U101s periodically in batches, the information is often out-of-date. The PAIS is printed when FM determines that U101 reporting from Missions is almost complete, sometimes substantially after the end of the reporting period. The PAIS for the period ending June 30, 1988 was reportedly received in AFR in early October. FM is the source of all official obligation and expenditure data.

b. Unmet Needs

The Project Obligation and Expenditure Cluster had the highest number of unmet needs of the 13 analyzed. Specific detailed unmet needs are reported in Annex 5; Figure 6 presents a summary of the most important unmet needs in the Project Obligations and Expenditure area.

At least 75 percent of the reported difficulties in this cluster concern reporting by FM and the PAIS report. The major concern was that PAIS is not current enough for making Bureau budget decisions. It is also incomplete for AFR decision-making purposes. The PACD is often out-of-date, and LOP information is not included. Both are important to interpreting the progress of a project. All fourteen information needs in this cluster (see Figure 4), were reported by at least one person as being unmet.

The PAIS report shows unexpended obligation figures for every project by country. However, several people from different offices reported pipeline information as an unmet need in interviews and questionnaires. The reasons cited relate to completeness and timeliness. Low project expenditures and high balances in themselves do not necessarily denote a problem project. The age of the pipeline may provide an answer, or an explanation of specific implementation delays which may have caused a slow disbursement rate. The latter information is not always easy to obtain. A thoroughly prepared PIR might contain it, but this report is produced only every six months and the pipeline situation is not necessarily addressed directly or in a systematic manner. In many cases, reasons for slow project disbursement would have to be determined from a review of the project implementation status and then estimates made on likely disbursements over the next six months from projected activities indicated in the PIR. Most Bureau officers have neither the time nor the inclination for such a probe on a regular basis. When specifics are needed quickly to explain a large pipeline in a certain project to the AA, often the only practical solution is a phone call to the Project Manager at the Mission. A number of Bureau staff would prefer better pipeline reporting to upgrade the Bureaus' in-house ability for pipeline analysis.

c. Reasons

These information difficulties exist essentially because FM (the PAIS producer/manager) does not consider the Africa Bureau to be a primary client for its information. Therefore, FM gives low priority to making the PAIS fit the needs of users in the regional bureaus. Simply put, much of the information critical to Bureau decision-making is not important to FM. A contributing reason to the unmet needs in this area is that there exists no formal feedback mechanism for either correcting inaccurate data or informing FM of user needs.

Another limitation is that the PAIS report and most FM reports are circulated in hard copy. While some information can be downloaded, it requires computer skills which are beyond the level of most Bureau staff. Nor does FM encourage people to access its data.

d. Implications

Because they cannot obtain up-to-date information from PAIS and other FM reports, many people have created their own databases which they update by phone and cables from the field. They use their own unofficial, but current, figures for Bureau reports, and staff update their own files at different times. The key result is that obligation and expenditure figures often are not consistent among FM and AFR reports. Bureau ad hoc databases are not usually checked against official FM figures, nor are the sources reported along with the figures so the reader can interpret them accurately.

Having many different obligation figures with varying degrees of currency and completeness used in reports has led to a high level of frustration within the Bureau and complaints by senior management. It also has led to less than complete and current reporting to the Congress, and project managers may miss deob/reob opportunities for lack of current information. The result is that considerable time is spent trying to get recent data from missions by phone or cable.

Any future management information design must at a minimum address the development of a producer/user interface between the Bureau and FM. Formal and informal mechanisms for user feedback will need to be created. The PAIS report--as a summary report--cannot meet all needs. Other reports may need to be developed for more detailed information. This entails information standards for reporting and the clear assignment of responsibility for producing the information.

2. Cluster: Allocations (OYB) including PI-480

a. Description and Sources

The information in this cluster enables the Bureau to distribute funds among Missions and programs. It is used primarily for the Bureau budget allocation process, the budget submission to OMB, and for preparing the annual Congressional Presentation. It is also

very important in tracking Bureau performance in regard to Congressional earmarks and special sectors. See Figure 7 for additional information uses.

Almost thirty existing databases provide information to the Bureau in this cluster. Most of these are managed from within the Bureau by DP/PAB. Project information comes from the Missions. Other inputs pertaining to budget allocations, OYB availabilities, and sector attributions come from DP and the Geographic offices in A.I.D./Washington. PAB is also the main user of allocation and OYB data, although it is also used by geographic offices, TR, and PD. A summary of information needs, sources and unmet needs is shown in Figure 5.

b. Unmet Needs

The problem in this cluster is not one of availability but of accessibility in a relevant, comparable format. Half of the identified unmet needs in this sector concerned the lack of relevant OYB information broken down by sector, special interests, and regions. (See Annex 5 for a complete listing of stated unmet information needs.) Because there are many different constituents for the reports (Congress, Agency top management, special sector monitors) the basic information is viewed through various prisms. However, it is accounted for on a strict financial basis without regard to special needs.

A second difficulty is obtaining current CN/TN status information. Bureau staff express a need which is not fully met for current information on dates of submissions, date of expiration, information on whether a CN is required, and a schedule of when a prospective CN will be submitted. CNs are prepared by the respective desks, monitored by DP/PAB and logged by LEG when transmitted to the Hill. DP/PAB produces a report which tracks CN/TNs. Date and status information is included. However, despite this current system for tracking CN status, staff report practical difficulties in obtaining up-to-date CN status.

c. Reasons

One of the main reasons for unmet information needs in this area is the multiple uses and users of the information. Agency strategies and policies are usually carried out at the Mission level, but some projects receive central bureau funding for special sectors. Some special sectors overlap, a project may benefit more than one sector.

A second reason is that much of the pure accounting data comes from FM. As with Project Obligations and Expenditures, FM has its own agenda and is not particularly concerned with the various information cuts required by Bureau staff. Again, there is no formal feedback mechanism to convey information requirements and limitations between FM and the Bureau.

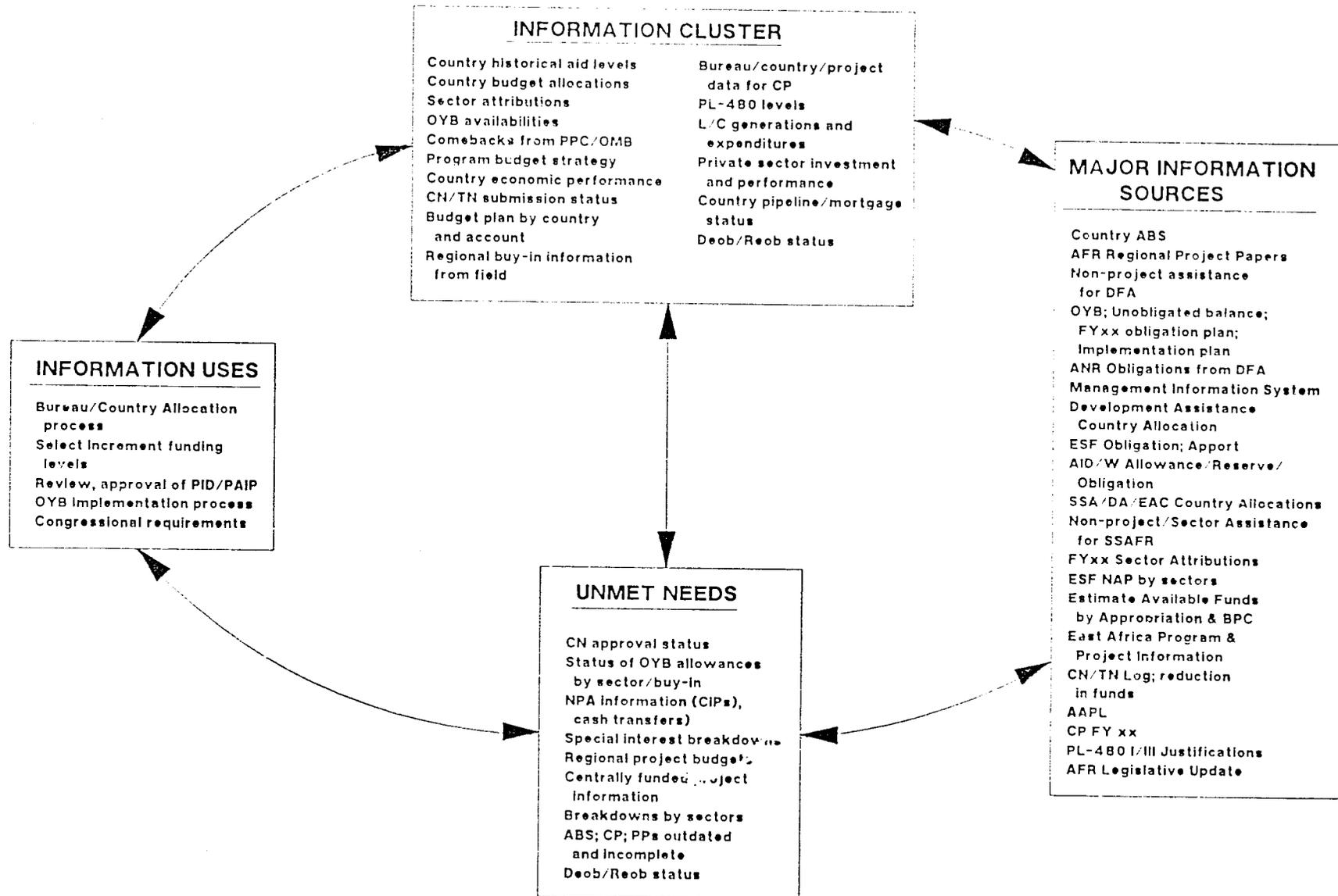


Figure 5: Cluster -- Allocations (OYB)

#### d. Implications

Since OYB data are not presented in formats that are suitable for all types of decisions which AFR staff must make, cuff records are created to suit the specific needs of different users. Problems of double attribution arise in breaking out the special interest information. Congressional "earmarks" cannot be effectively monitored without knowing the status of an account. Not having reliable figures on remaining spending in a particular sector makes it difficult to meet sector targets. Significant staff time is lost in individually calculating cuts on sectors, NPA and centrally-funded projects.

The lack of precise, current information on CN status makes it difficult to monitor the authorization/obligation process. If not maintained electronically with broad access by Desk Officers, PD, TR, and others, obligation delays can occur.

Any information system providing information in this cluster will have to deal with cost/benefit trade-offs to determine at what level of aggregation and tagging the information will be reported. In essence, what is the lowest informational common denominator where the benefits derived still exceed the costs of collection and maintenance. Producer/user interfaces will need to be developed between FM and Bureau users.

### 3. Cluster: Bureau Program Review and Approval

#### a. Description and Sources

This is the most complex cluster of information needs within the Bureau and involves the plans (Action Plans, strategy documents, Project Papers, and evaluations) which the Bureau and Missions prepare and approve for planning and implementing programs and for monitoring the effectiveness of those programs. A good deal of qualitative information is required to assess the effectiveness of the Bureau's program. See Figure 6 for additional detail on information needs and uses in this cluster.

Almost half of the sources of information in this cluster originate outside the Bureau. Only one-fourth is generated by Bureau offices in Washington. The remaining fourth comes from the Missions. Almost all the sources of information are heavily qualitative and difficult to quantify. Strategy papers, project papers, and evaluation reports come from the Missions and are largely descriptive in nature. CDIE provides most of the outside reports including project evaluations, indexes to technical reports, and briefing portfolios. Interestingly, most of the information is text, and a substantial portion is available on-line, either in full text or abstract form. The information is generated by the Missions and by the Bureau itself. It is used by all Bureau Offices. Annex 5 provides considerable detail on specific sources of information in this cluster.

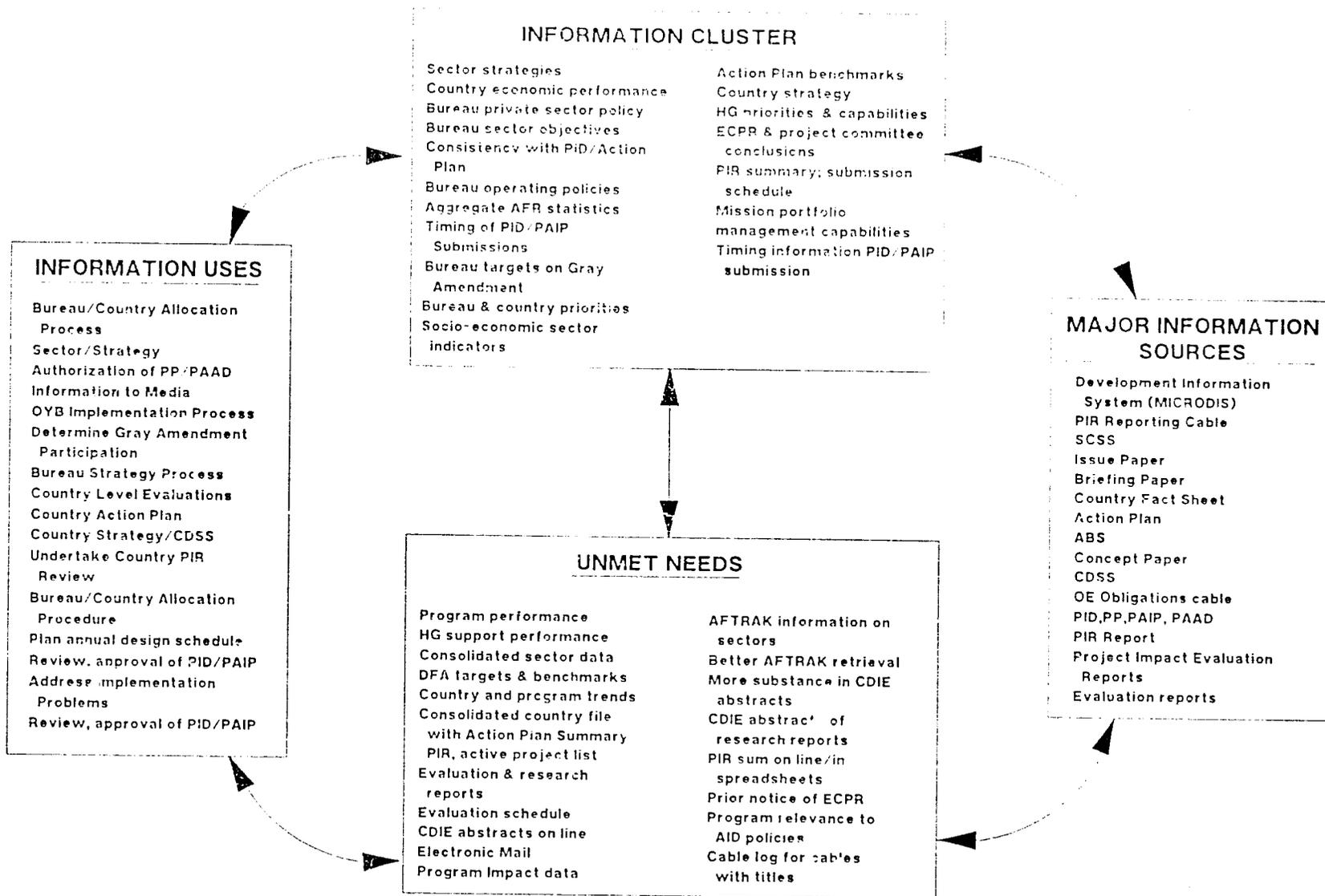


Figure 6: Cluster -- Bureau Review and Approval

b. Unmet Needs

Timeliness and accessibility are major issues in this cluster. Bureau staff have trouble locating current evaluation reports. Country data is scattered, in some cases difficult to access, in others accessible, but lengthy and time consuming to digest. Almost half of the expressed unmet needs in this cluster dealt with locating scattered, but available, information. (See Annex 5 for detailed comments from respondents on unmet needs in this cluster.) Accessibility is the key concern in this cluster. Usable information is inaccessible because partial information is available in various places, communication among users is not sufficient, or people lack the training to access the information. People complain that they waste a great deal of time trying to locate information and putting it into the form they need. Lateral communication (electronic, written and oral) within the Bureau is not enough to promote the smooth exchange of data. Information is available, but people waste time "running up and down the hall" or on the phone looking for people or reports which can help them.

Evaluation is a major initiative within the Bureau. Its importance is also apparent in the clusters on Economic Data and Sector and Special Interests. Interviews suggest that the need for information to monitor the impact of programs is already acute, especially with senior management and TR, and it will become more important to other offices in time. This is a major information gap. Currently, project officers in Washington complain that they do not receive on a systematic basis many evaluations performed in the field. They need project evaluation and research reports which will enable them improve their monitoring of projects in progress and to design new or follow-on activities.

CDIE is a repository of evaluation reports, but Bureau staff do not take full advantage of it. The complaint is heard that much of the CDIE material is not directly relevant to current evaluation needs because it comes from projects which have been completed and that it is harder to obtain information on current projects, which are often more germane to new project issues. Some Bureau staff note that because of its structure, CDIE is reactive and responds mainly to phone calls and requests. This comment, however, reflects a less than full understanding of the services CDIE offers. It is also said that the manner in which CDIE files are set up often does not fit the specific needs of the Bureau without significant data manipulation.

Cables are an essential source of data, yet they are not logged or indexed by receiving offices, other than to track action responses. They are retrievable only by number or date. In addition, most offices maintain daily chron files, but because of the volume of cables, they are not retained more than a few days. Cable subject files are maintained unevenly and are usually centralized, making access inconvenient for most users. Project-related cables are microfiched but central maintenance discourages regular access by PDO's and others. Cables are not identified as an essential input form, so that FM cannot use them to input data. Since project cables often contain much

qualitative information, desk officers and PDOs often act on them directly, but because they are not logged, tracking is difficult and time is lost searching for earlier cables.

Some unmet needs are very specific such as more systematic filing, an improved way to deal with the volume of cables received by the Bureau, and a means to include in AFTRAF country program information where a project number had not been assigned. Annex 5 has a complete listing of unmet needs reported by individuals contacted.

c. Reasons

The source of many of the information problems in this area is the importance of qualitative, textual data in the decision-making processes of this cluster. This kind of data is more difficult to incorporate into a transportable database. As a result personal communications becomes much more important.

Bureau reviews of everything from CDSSs to project papers are facilitated by qualitative information on the overall country program, host government performance and multi-year statistical data to establish trends. Most of this is subjective information, based in part on judgments by those who report it, through the CDSS, PIRs, various valuations, and ad hoc cable reporting. It is often difficult to form a meaningful qualitative country overview from these multiple sources, even for the Bureau staff working regularly with that country and even more difficult for others further removed.

The Bureau currently considers text documents unsuitable for electronic databases and therefore it is not abstracted. Most of the information for bureau reviews comes in as text and is reorganized into other text reports. Documents must be sorted through and information extracted, often retyped since text is usually not accompanied by floppy disks. Additionally, it is difficult to know all the people who need to see a particular report. Since the information is not on-line, or in a central place, Bureau staff spend time trying to find the right information.

Bureau staff often do not take advantage of available data because they have little free time to become acquainted with existing databases and learn what others are creating. There are no users groups, brown bag lunches, or data base registries to help users learn what is available and how to access it.

The sheer volume of cables makes them difficult to manage. Since there is no abstracting and limited logging, relevant cables are physically difficult to find.

d. Implications

The two major implications for the efficient and effective operation in this sector, are time spent in gathering information and the reduced quality of decisions because of incomplete information. Ongoing projects are monitored and future projects planned less

effectively with a greater cost in staff time. Both of these are difficult to measure quantitatively, but are reflected in the frustrations of Bureau staff trying to gather information for decisions and decision-makers, and recipients of the information who wonder at conflicting and incomplete information. (See comments under Stated Unmet Information Need in Annex 5).

More emphasis on and clearer expectations about interactions between information producers and users will need to be established for improved distribution of information. The level and means of user access must be addressed with appropriate training. For example if more information is provided through central databases, training in accessing those databases will be required. The cost/benefit of abstracting cables and reports for circulations will need to be weighed.

#### 4. Cluster: Sectors and Special Interests

##### a. Description and Sources

Information in this cluster is external to A.I.D. and is important in planning sector strategies, determining how funds will be allocated, and in evaluating projects at the Mission and the Bureau level. It is taking on increasing importance as indicators of impact for the DFA funds are put into place. Information on health, population, education, political environment, and country priorities is essential for planning effective A.I.D. interventions. Figures on agriculture production enable the Bureau to plan its PL 480 distribution. Food aid will take on a more important role in Africa and the need for information in this area will increase. See Figure 7 for additional details on information uses in this cluster.

Much information on agricultural issues including periodic updates, comes originally from the World Bank, FAO and USDA; Bureau staff access this information from in-house databases. Over half of these databases are maintained by TR within the African Bureau. They contain information on population, A.I.D.S, FEWS, and PL480 recipients. (For complete list of major databases in this area, see Annex 5.) For monitoring program impact, TR needs a reliable source of data with comparable statistics across countries. The FEWS project will generate considerable data to enable predictions of agricultural production.

FVA is currently the processor of all information on food aid. They get their information from a variety of sources such as USDA on the availability of commodities, contractors on costs of shipping and dates of shipping and expected arrival, and from Missions on projected needs and commodity impact. FVA has hired a contractor to design a data base for them but it may be a while until the system is fully functioning.

##### b. Unmet Needs

In all areas socio-economic data on Africa tends to be spotty, incomplete and at least two years old. Some of it represents

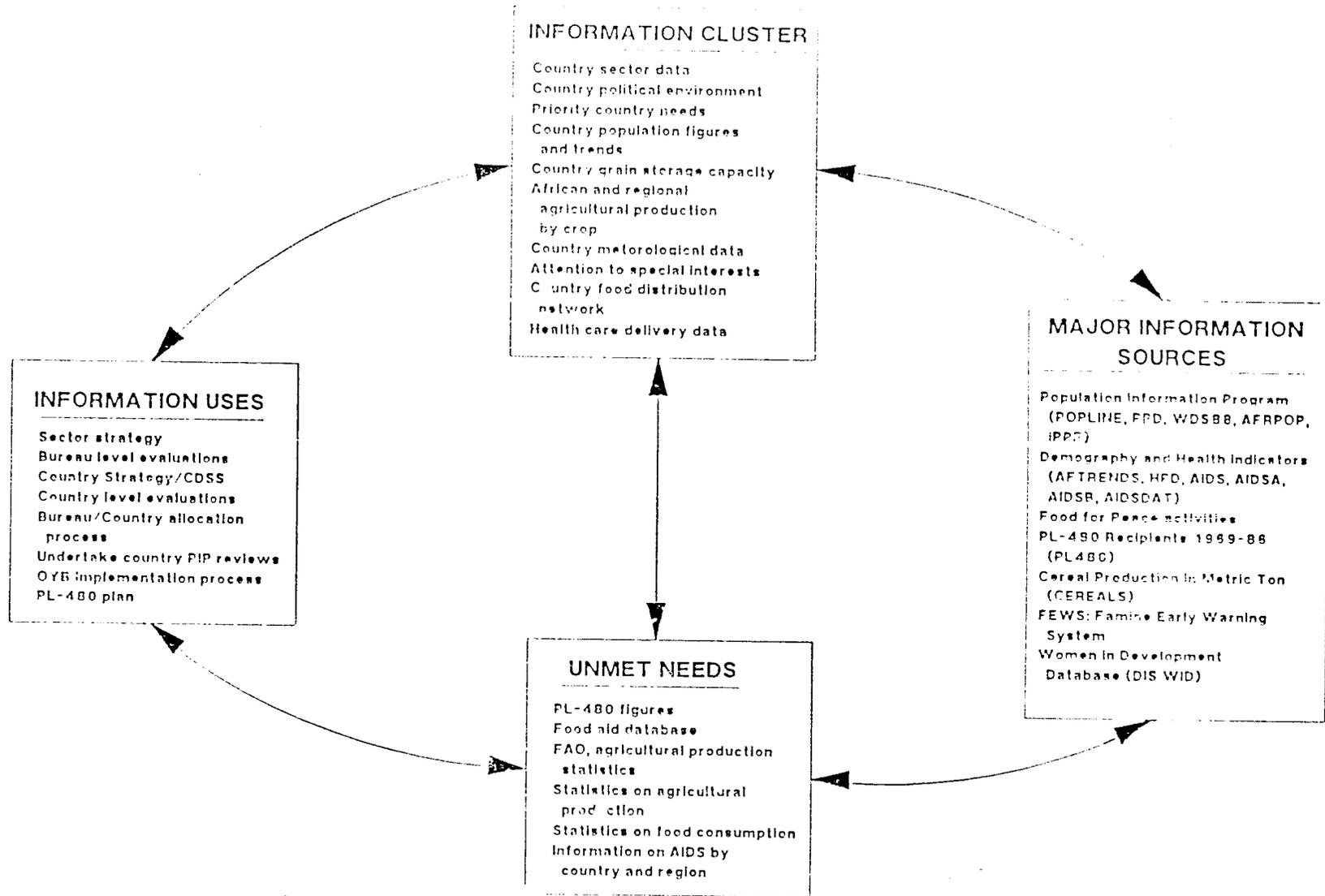


Figure 7: Cluster -- Sector and Special Interest

estimates by Host Government or expatriate experts. However, it is the best data currently available and is used as such. Two main information gaps were reported in this information cluster. The first concerns agricultural data from the World Bank and FAO related to country agricultural production by crop, including multi-year figures for trend analysis, commodity trade figures and food consumption data. In particular, TR needs this information to monitor the impact of its programs and to plan for future programs.

The second, is the absence of a Food Aid data base. While a new position has been created in the Bureau to handle food aid information and the creation of a data base is in process, gaps currently exist. Timely, complete information on PL480 obligations, shipments, deliveries and expenditures is a serious weakness. PIRs now require the reporting of food aid, but so far the consistency of the reporting has been uneven.

The creation of an effective food aid data base in the AFR Bureau is a high priority, but its effectiveness will depend on obtaining high quality data from FVA. AFR staff are frequently asked for information on food aid by citizens groups, lobbies, the Congress, and the press. The information usually has to be pieced together with phone calls to various offices in FVA and perhaps U.S.A.I.D. Missions. FVA is supposed to produce a monthly status statement but has been unable to satisfy basic information needs on food aid within its present reporting.

Despite these two information gaps, and spotty source data for all sectors, it is noteworthy that the interviews and questionnaires indicated that needs in all major sectors except agriculture appear to be met. A.I.D. has apparently effectively tapped external sources of information for sectors such as health, population, and education to the satisfaction of Bureau users. However, it is recognized that adequate data by country and region on recent special interests such as A.I.D.S and child survival is not yet available and must be considered an unmet need.

c. Reasons

Source data in this area is often spotty under good conditions. It is difficult to gather accurate statistics in any case, and the third world environment and infrastructure make it more difficult. Because of poor sources and broad subject matter, multiple sources must be used to gather the information. Problems of comparability occur.

d. Implications

Both food aid and agriculture are areas of major importance for the Bureau. Because of the increased emphasis on program impact and food aid, the importance of agriculture information in AFR development strategies will increase. It will become increasingly important to have solid information on which to base policy and program

decisions. Without good databases, time spent gathering up-to-date information will increase dramatically.

Design implications in this sector are pressing because the design of a major component--the Food Aid database--is in progress. Because FVA is outside the Bureau and responding to many users, the Bureau must concentrate on communicating its particular needs to FVA. The Bureau is in a good position to have an impact on this critical user/producer interface. A secondary implication for design in this area, is the need to identify key data requirements and potential sources. In particular, with a coordinated and systematic effort, some of the missing data could be collected by the Missions.

## 5. Cluster: Economic Information

### a. Description and Sources

This cluster includes all the background information on economic conditions within a country which are essential for developing AFR Bureau policies, as well as strategies for carrying those policies out. It also provides country background information for A.I.D.'s planning process which is required for preparing effective development strategies at a sector, country and Bureau level. (See Figure 8 for detailed information needs).

The need for this type of information is increasing. Economic indicators are used more and more to monitor the effectiveness of AFR's overall program. While currently the information is used mostly for program and project design, under the DFA funding legislation, funding levels will be based on changes in economic, social and other performance indicators. As the DFA monitoring system is put in place, it will form a central part of the Bureau's monitoring system.

The information for these databases currently comes primarily from the World Bank and IMF, mostly in hard copy though some is available on diskette, where it is re-entered into PAR's data base. Most Bureau staff access this information through PAR's databases. All but one major internal database in this sector is produced by DP/PAR. World Development Indicators produced by the IBRD, is one external database used directly within the Bureau. PAR is working on presenting summary economic data in the most useful format for Bureau users. CDIE currently also has a data base on Social and Economic Indicators which is updated monthly, quarterly, semi-annually and annually depending on the source of the data. However, interviewees do not report using it. CDIE's Economic and Social database also provides information in this category.

One individual in PAR has total responsibility for the maintenance of economic databases. This can affect the availability of the data if that person is unavailable. Reports are produced in hard copy on request. See Annex 5 for further details on the sources and information needs in this cluster.

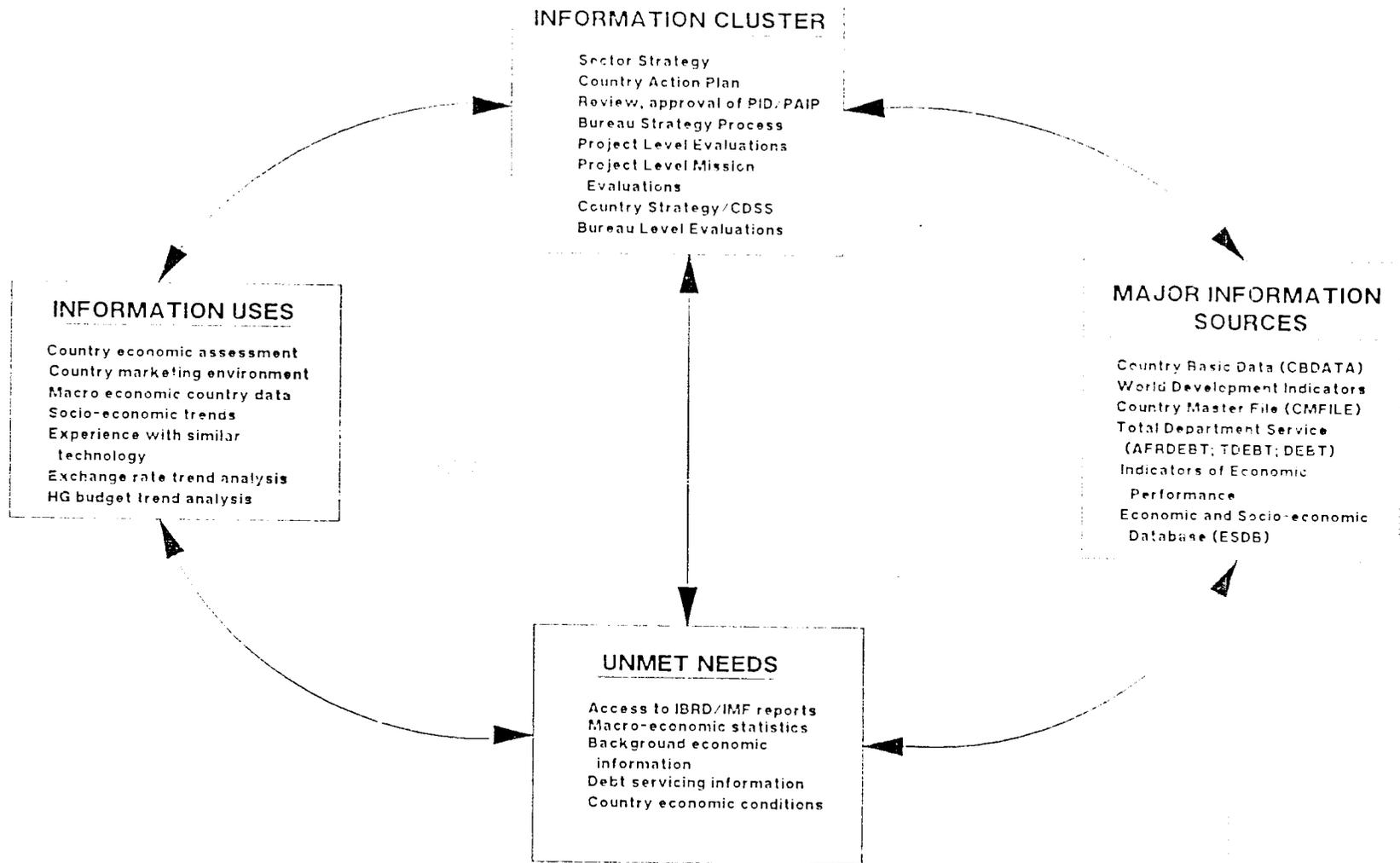


Figure 8: Cluster -- Economic

b. Unmet Needs

Accessibility of this information is the principal problem. Databases are maintained in the Bureau and elsewhere in A.I.D., but knowledge regarding them is not sufficiently widespread. Although AFR/DP/PAR manages databases with country economic information, the Geographic offices and PD indicate that they do not have access to simple one or two page summaries of the economic indicators for each country or region. These data are available but not currently grouped in this kind of summary form. People within the Bureau are apparently unaware of the availability and content of these databases and most lack the expertise to access these databases effectively.

Information in this sector is often not in the format required by the user, and needs to be managed before being usable. Bureau staff comments in interviews indicate a need for more current and comparable information on economic conditions in countries, and better, more direct access, into outside databases.

c. Reasons

As alluded to above, Bureau staff are not sufficiently aware of the information which is available and often do not have the training necessary to access it for themselves. Access to Bureau databases is too dependent on specific individuals. There is not an institutional body-of-knowledge sufficiently widespread.

A second reason for unmet needs in this area is an inherent limitation in gathering the information. Economic databases have their weaknesses with respect to completeness, timeliness and accuracy. Since most data is at least two and a half years old, inferences to be drawn by these statistics may be overtaken by recent political or economic events. Significant data gaps occur in all sectors, especially information on private investment and the business sector now emerging in many African countries. Gaps are sometimes filled in by estimates from government or expatriate economists whose biases and assumptions influence the accuracy of the estimates. Because of these limitations, as well as restricted access to the data which is produced, up-to-date, relevant country economic data is still reported as a not fully met need, but the availability of basic data in a useful format is improving, largely through the efforts of DP/PAR.

d. Implications

Incomplete data for project planning and decision-making is the primary impact of unmet needs in this area on Bureau effectiveness and efficiency. Some of these problems are beyond the control of the Bureau. However, there are clear unmet needs which the Bureau can alleviate in future management information designs by paying careful attention to user training and outreach mechanisms and to identification of key data needed and potential sources in the field.

## 6. Cluster: Direct Hire Personnel

### a. Description and Sources

Information in this cluster concerns direct hire A.I.D. personnel and comes from PFM/PM. The information is used to determine whether Missions are adequately staffed to manage proposed new projects, to determine new assignments, and to locate individuals. Almost all personnel reports originate outside the Bureau, generally from the RAMPS database, maintained by PFM/PM. Two personnel reports originate within the Bureau by TR/HPN and MGT/HRM respectively (See Annex 5 for additional details.) The main source of personnel information within the Bureau is the AOSC and Staffing Pattern which are published by PM from the RAMPs data base. Access to RAMPS is controlled because the Privacy Act restricts its use. While this information is entirely within the Agency, it is external to the Bureau. See Figure 9 for more information on the cluster.

### b. Unmet Needs

Lack of current information is the primary unmet need in this cluster. There are numerous complaints about the RAMPS reports being out of date. Examples of people changing assignments that do not show up in the Staffing Pattern for three months are not uncommon. The Staffing Pattern does not indicate the "as of" date for which it is current, making it difficult to judge the relevancy of the information. There were several requests among those interviewed to know planned changes as well as actual changes in assignment.

TR, PD, and the Geographic Offices have trouble getting current information on staff availabilities. They need to know where people with specific skills are assigned and when they are available for transfer. Personnel information regarding special skills or expertise which would help fill sector or special interest needs, such as drought or locust control expertise, is not available in any systematic way.

Some information is collected, but not available to Bureau staff. Concerns for individual privacy prohibit full access to the RAMPS database. However, even non-confidential information such as staff assignments and availability is not accessible on-line by Bureau staff.

Another problem is information about the travel schedule of Bureau staff, as well as when Mission staff will be in A.I.D./W. Although visitor lists are sometimes circulated, they are incomplete and many people do not see them in time to be useful.

### c. Reasons

Information needs in availability and qualifications of Agency personnel are unmet because of three basic reasons. First, the information comes from outside the Bureau. The issue of finding ways to make other Bureaus responsive to the information needs of the AFR Bureau is once again raised. Second, the need for confidentiality complicates accessibility and makes PM more guarded than might

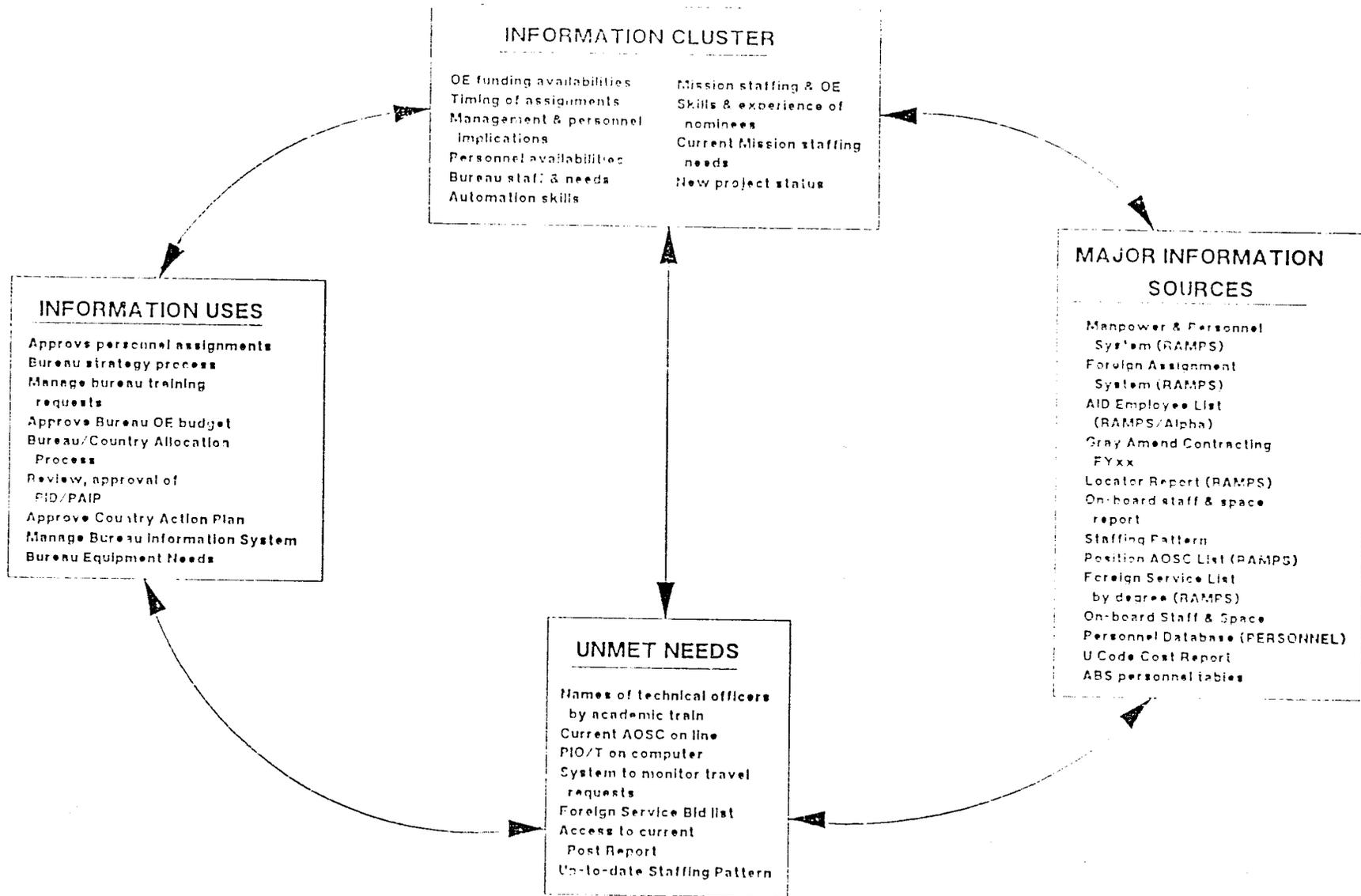


Figure 9: Cluster -- Direct Hire Personnel

otherwise be the case. Finally, PM updates the database in a batch mode so staff changes are not available on a continuous basis. The effect is that the posting of individual changes (perhaps very important to certain users) can be delayed pending batch updating.

Travel schedules, especially if done manually and circulated in hard copy, pose a logistical problem in that they change frequently and often quickly. In addition, for lower level staff there is no assigned responsibility to produce a travel schedule.

d. Implications

Since current information on staff assignments is difficult to obtain, those who need the information develop separate databases. SWAP, SW, and TR/HPN have created their own personnel databases. The time and effort involved in matching a qualified candidate with a job vacancy increases because information is not available. Efforts are often duplicated.

Without adequate information on travel schedules important opportunities for contact and exchange of information with the field may be lost. Knowing travel schedules would enable people in Washington to take advantage of visits from field staff to quickly and effectively while they are in town. Much time is taken up trying to plan meetings or schedule activities when personnel travel frequently.

C. Summary of Seven Other Clusters with Fewer Unmet Needs

In contrast to the six priority clusters with major unmet needs analyzed above, seven other clusters with significantly fewer unmet needs are summarized briefly, covering the main areas of sources/users, analysis and implications of unmet needs. Listed below are these additional clusters in approximate descending order of their unmet needs. Annex 5 provides more detail and supporting information on these clusters.

1. Cluster: Mission Program Management

a. Description and Sources

This cluster is closely related to Bureau Review and Approvals since they both concern Bureau programming. However, Mission Program Management is on a more micro level and relates mainly to information generated by the mission in connection with program planning documents and project design and implementation documents. The Mission is the primary source of information, although much of the form the information is received in is a result of Bureau and Agency wide policies.

The main users are Bureau offices including DP, PD, TR and the geographic desks.

b. Unmet Needs

While most major documents, including the CDSS, ABS, PIDs/PAIPs, PPs/PAADs and PIRs receive wide and timely circulation in AFR/W, some deficiencies are reported. These include the lack of, or an inadequate CDSS synopsis, non-receipt of quite a few project evaluations undertaken by Missions, exclusion of PL480 monitoring information in the PIRs and failure to forward Project Implementation Letters (PILs) systematically for use by PD and the desk.

At the qualitative level, little objective information is available on the effectiveness of the country program as a whole or its long-term impact on the host country economy. This is especially true of information to assess the effectiveness and impact of non-project assistance. The Bureau's evaluation program is examining ways to address this information gap.

c. Reasons

Since all of this information exists in suitable form at the Mission, the problem is one of access and should be correctable by improved dialogue between the mission and its desk in the Bureau and PD backstop.

d. Implications

To the extent that important mission documents are not readily available in A.I.D./W, additional time and effort must be made by Bureau support staff to keep up to date with program and project status in the missions. Towards this end, one senior Bureau officer suggested the creation of a combined database presenting a synopsis of essential program data contained in the CDSS, ABS, Action Plan for emphasis countries and eventually all countries.

2. Cluster: Private Sector

a. Description and Sources

This cluster is an emerging information need in A.I.D.. Recent emphasis on the private sector, including privatization, has increased the demand for information on business conditions in developing countries. Typical of the kinds of information found in this cluster are the role of host country government in industry, laws regarding foreign investment including profit remittance, laws governing competition, licensing, taxation, labor supply and relations, and foreign trade. In short, this is the information any business person would seek prior to investing in a developing country.

The sources of the data come primarily from non-A.I.D. and non-government sources, including private corporations and commercial banks, international organizations such as the World Bank and IFC, and host country institutions promoting investment. Dun and Bradstreet is one example of an outside database.

b. Unmet Needs

MDI is currently the prime user of this information, but as initiatives develop, other offices like TR, PD and the geographic desks will increasingly need this type of information.

Most needed both by MDI and potential investors is information on the country investment climate, corporate and personal taxes, incentives, labor resources and laws, profit remittances, price controls and foreign exchange controls. Much of this information exists in outside databases. However, as a relatively new office, MDI is in the process of targeting the kind of private sector information it will need to carry out its mandate.

c. Reasons

Since emphasis on domestic and foreign private investment is relatively new, host country institutions for developing this information are only in the formative phase in most African countries. Information pertinent to countries in Africa is often scattered and difficult to pull together.

d. Implications

The current lack of reliable data in such basic areas as business climate and host government policies on investment impose a constraint on the attracting private investment. Increasing development through private investment will require that investors have a reliable source of business information.

The Bureau is in the process of refining its information needs and access methods in this area. Any future information systems design will not only need to call heavily on outside databases, but will also have to define clearly the data required, when it needs to be collected by A.I.D. itself, and how it will be distributed.

3. Cluster: Contractor Resources

a. Description and Sources

A good bit of the Agency's work is carried out by contract personnel, either employed directly by U.S.A.I.D. as private service contractors or through consulting firms. Information on contractor performance, technical capabilities, and means of access through IQCs is contained in this cluster.

Information on agency contract personnel is maintained by individual missions, the M/SER contract office and for minority contracting, the OSDBU. Databases include the COORS report and the TR consultant database. Principal Bureau users are MGT, TR, PD and the geographic offices.

b. Unmet Needs

Contractor information is reported to be inadequate at all levels. The central COORS report is not complete or up to date and does not cover sub-contracting. Reporting from the field on numbers of contract employees is inconsistent and unreliable (e.g. some missions report only PSCs, others U.S. institutional contractors, and some local national contractors). The identification of independent consultants for design and evaluation work is haphazard and often by word of mouth (although recently TR and PD have developed consultant databases). Reporting on minority contracting to meet Gray Amendment requirements is also reported to be incomplete and deficient.

c. Reasons

A primary reason for the unmet needs above is that reporting contractor information is a low priority, both in Washington and in Missions. Other pressing activities simply force contractor information reports to the bottom of the pile. Also, there is no requirement to submit adequate contractor data. If it is not done there is no grave consequence. Even the information itself seems not to be very important. Another reason for the unmet needs cited in that there is no standardization of contractor data. Criteria for classifying contractors and for reporting their activities are not clear. Even contracting officers report similar contractor information under different headings. Some, for example, report women owned firms as 8(a) companies, while other report them as Gray Amendment Firms only. Data entry error is another reason for some of the difficulties with this information cluster. Finally, the scatter of contract information all over the world makes it difficult to array contractor data so that information is timely and categories of data are reported appropriately by all Missions.

d. Implications

Not having an adequate system for reporting contracts means that A.I.D./W does not know the total number of contractors financed; country comparisons are invalid because of different standards of reporting. Vagueness in the reporting of contractors gives rise to what several people have called "shadow staffing", especially as direct hire ceilings continue to decline in the field. Incomplete reporting of minority contracting may have the effect of understating compliance with Gray Amendment targets; reporting of individuals as firms under Gray Amendment targets may have the opposite effect.

4. Other Donor Programs

a. Description and Sources

Most information on what other donors are doing in Africa comes from a combination of the annual OECD/DAC publication on Technical Cooperation and its donor-by-country tables, the UNDP's Development Cooperation Reports (DCPs), and bilateral contacts between

A.I.D. and the other donor. Main users are the missions, DP/PPE, the geographic desks and PD. Qualitative data on other donor programs is seldom available at all and not in any systematic or comparative way.

b. Unmet Needs

The principal complaint is that reporting is out of date and incomplete. Specific data on technical assistance is particularly hard to come by. Information on general development assistance is also difficult to obtain, as is food aid assistance.

c. Reasons

A principal reason for the unmet needs above is the low priority given by all donors to carefully reporting their assistance activities to each other. If this need was filled, the benefits are difficult for some to perceive. Since many more important development activities need resources, including the time and energy of development professionals, few are allocated in this direction.

Another reason for these unmet information needs is that some donors are reluctant to release information on personnel qualifications, experience levels and salaries. This makes it difficult to obtain technical assistance information from them.

Some of the difficulties experienced in acquiring food aid information (in addition to its being a low priority activity for most donors) arise because most food aid activity is not included in standard development assistance information flows and organizations. Funds other than typical development assistance and entities besides central development agencies are frequently involved.

d. Implications

International efforts at donor coordination have improved steadily over the years, but some gaps still persist, which may result in occasional duplication of assistance or in unawareness of useful research and technical studies undertaken by others.

Good information in this area is dependent on the presence of solid, cooperative relationships among donors. Mechanisms to establish information sharing must first exist before designing an information system in this cluster.

5. Management of Operating Expense Budget

Management of the OE budget is internal to the agency and should be treated consistently by operating bureaus. All AFR offices and missions need OE budget information, and it is generally available on a timely basis. However, some analysts would like to see more detail, such as unit costs, or a different cut, such as merged data on country program figures, OE budget and mission staffing on a single table. While not everyone would need such a breakdown, with the increased flexibility provided by the creation of automated databases, users will be able to manipulate data to provide this kind of

combination. Perhaps the main user of OE data, the Bureau Controller, noted that there is no pipeline reporting for the OE budget since it is one-year money which is quickly disbursed. It would be useful to have a better system for analyzing OE expenditures against the original budget.

#### 6. Agency and Congressional Policy

Current legislative information, Congressional action on special interests, as well as agency policy guidance in the program, personnel and budget areas are part of this cluster. Some questionnaires indicated that this kind of information is hard to obtain on a timely basis, giving rise to suggestions for the creation of a database on legislative actions which affect the agency.

#### 7. Local Currency

All local currency reporting comes from the Missions and is published in hard copy by FM quarterly. DP, which maintains its own database on local currency, is the main user of this information, along with the geographic desks and TR for the projects it manages. Most other bureau staff have little use for local currency reporting, but some of those who need it have indicated that would like to see more detail on the sources and uses of local currency, as well as a breakdown by sector.

#### D. Important Information Gaps

Several important information gaps were identified in the course of this analysis. Each of these gaps were treated as an unmet need in the discussion of the information clusters above. In this section, we briefly review all these information gaps together to highlight their significance.

##### 1. Country and Regional Performance and Trend Data (e.g., social, economic, political, environmental)

Country and regional performance and trend data comprise another information gap. How healthy is the economy? What are trade, budget and production trends? What is the trend in infant mortality? What is the performance of Government with respect to certain policy reforms? Substantial pieces of this type of information are frequently not available for individual countries. Nor is it available for comparisons across countries. Frequently the data that is available is old, making assessments of country performance difficult.

##### 2. U.S.A.I.D. Program Effectiveness and Impact by Country and Region

Effectiveness of U.S.A.I.D. country programs refers to implementation of the smoothness with which planned projects and programs are carried out. The nuts and bolts of expensive rates, CIP disbursement, personnel arrivals, contractor activities and other actions undertaken by U.S.A.I.D. in the development program of the

country make up the measurable data in this area. Effective implementation of this totality of activities is difficult to measure; it is very subjective. Also, there is little overall evaluation data on effectiveness of country program implementation. One result is that Mission programs tend to get a "reputation." Some are good programs. Others have a reputation of not being good programs. However, these perceptions seldom are supported by sound documentation.

Another information gap identified is lack of country program impact data. U.S.A.I.D. projects are implemented, but what overall effect do they have? What progress are we making? This information is needed, especially in some sectors, to assess the performance of A.I.D., other donors, and the country itself. It is particularly important as A.I.D. moves progressively, toward a performance based system for programming. At present, such impact information is piecemeal or in some cases non-existent. Information about some aspects of NPA implementation status and impact also is often not available. A key example is information about CIPs. One often must call the Controller of the Mission responsible for the program to obtain up-to-date CIP information. This information gap is especially significant because a CIP and other NPA is frequently a large portion of a Mission's portfolio.

3. Aggregate Program by Sector Data

Program data by sector is frequently an information gap. This is especially true in agriculture where multi-year, country and regional data by crop is not available. Project by project data usually exists, but overall sector information often does not. This makes it difficult to look at sector progress as a whole.

4. Aggregate Information on Food Aid and Food Needs for planning

Although substantial food aid information exists, a gap remains in the aggregate information on food aid and food needs for planning. A.I.D. is developing a food aid database which it is anticipated will help close this gap.

5. Personnel Data on Special Experience by Sector (e.g., drought or locusts, etc.)

A.I.D.'s personnel system does not enable identification of individuals with special expertise needed elsewhere in the Agency. This information gap precludes matching personnel resources with critical needs as in times of crisis.

6. Sector/special Interest Performance Data (e.g., A.I.D.S. small business by Country and Region)

Sector performance measurement and comparison data is difficult to obtain for more than one country. Thus, an information gap frequently occurs when attempting to assess the performance of many sector/special interest activities.

## 7. Qualitative Information on Other Donor Assistance

An information gap exists regarding qualitative information about other donor assistance. Frequently such information is not available and cannot easily be obtained. Donors give reporting such information low priority; some consider certain data--such as that involving technical assistance individuals--to be sensitive.

### E. Structural Problems Resulting in Unmet Information Needs

Underlying many of the unmet needs discussed above are basic structural issues which must be addressed in any future design effort. These issues arise from factors external to the information itself, principally at the interface between producers and users and between sources and producers. A number of these structural problems, issues and questions stem from the recent growth in the Bureau of both the number of computers and the volume of information available and needed to perform the Bureau's work. These factors relate to the practical aspects of work performance and administration, rather than to the content of the information itself. The team's observations are described below.

#### 1. Insufficient Accountability of Information Producers/managers to Users in the Africa Bureau

A.I.D. has an Agency-wide problem of inadequate information access that results principally from insufficient accountability of data producers/managers to data users. First, the guidelines for producers in generating information for users are unclear or non-existent. Second, lack of a formal feedback mechanism between information producers and users, clearly supported by Agency top management, prevents necessary interchanges between user and producer in several key areas.

##### a. Unclear guidelines

Reports and information in A.I.D. and the Africa Bureau are often developed by one user/producer and distributed to others. This inevitably entails the need to take other user requirements into consideration when gathering and developing the information. However, the Bureau is not sufficiently organized and staffed to provide standards and guidelines to support this process. If each person creates his or her own data base, it will be designed in exactly the format and level of detail that person needs. When a second user taps into that data base, it is likely the format or level of detail needed will be slightly different from that of the first user. Since the creator uses the data, s/he has a special interest in entering data quickly and accurately. S/he may take less interest in making program changes for other users, especially when busy professionals are involved. The problem is compounded when those who create and maintain data bases are not users of the information at all, as is the case with FM. The timely entering of data is of much lower priority and creating imaginative ways of displaying the data may have no priority at all.

The person who produces or maintains a data base may need to take on the responsibility of adding dimensions to the array or presenting it in slightly different formats. However, within the Bureau, this responsibility is rarely a recognized one or part of that person's job description. For busy professionals, this means that other user needs go unmet even if small changes would increase the usefulness of a report to other users. Even with technically sophisticated computer specialists who design and maintain systems, there is no mandate to increase access to less sophisticated users. They are apt to ignore the capabilities of their colleagues and create a dependency on technical staff to access the information. Even within the Africa Bureau, data bases in TR and PAR are not fully used because they are maintained by skilled computer programmers and other staff cannot access them without help from the originator.

b. Lack of formal feedback mechanisms

Structured interchanges between producers and users of information also are necessary. These interchanges could result in modifications to reports which would satisfy information needs better without incurring additional costs. Four of the priority clusters are problematic because the Africa Bureau must depend on sources of information outside the Bureau. The Bureau depends on Agency sources for personnel, financial, evaluation reports and food aid information.

The Bureaus which produce this information are generally not eager to share their databases with others for a variety of reasons. The Personnel Office worries about complying with the Privacy Act. FM does not consider the regional bureaus to be principal clients and does not even use some of its own reports, such as PAIS. FVA is reportedly designing a system for its own needs but has not taken into consideration others who may also need the information.

One of the most maligned reports in the agency is the Project Accounting Information System (PAIS) report from FM. Its contents are critical to project monitoring and routine decision making about budgets and project status. The details of complaints about the PAIS report are discussed elsewhere, but the problems with the PAIS report highlight an important issue of data base management and accountability.

FM sees their main clients as the GAO, OMB, Treasury, and the Congress, not the regional bureaus which depend on FM reports for official obligations. The PAIS, and its cousins the FLASH and the W-209 and W-211, do not give people in the Africa Bureau the information they need in a timely and reliable way. Yet, there is no mechanism, formal or informal, for Bureau dissatisfactions to be made known to FM or to provide FM with a mandate to be more responsive to the needs of the regional bureaus.

FM staff say that they receive very little feedback on their reports and that delays in posting are because of a shortage of staff to enter data. Yet, people within the Bureau are able to maintain their own databases with more timely information from cables and phone

calls. While this information is informal or unofficial, it represents the level (timeliness and quality) needed to respond to inquiries and to participate in the Bureau decision-making process.

Most Bureau users are computer literate and motivated. A.I.D.'s compartmentalization of data systems, especially where it results in producers not also being users, is ill-suited to effectively assist these users. IRM analyst responsibilities are limited to answering technical questions, divorced from content. This leaves the client (the Bureau) less than fully satisfied and supported. The lack of a procedure for FM to adjust its reports based upon periodic monitoring of the intended users of the reports has the same effect.

To counteract this compartmentalization, the Bureau has established some computer data support positions within certain offices. However, these specialized personnel differ widely in their ability to process data for others' use. In most cases, they do not see themselves as facilitators of others' data skills. As a result, many staff in the Africa Bureau are primarily dependent on self-help by colleagues and their own use of computer manuals to obtain the information they need and to expand their computer skills. The Bureau needs more personnel assigned to help staff overcome these and other information related constraints. IRM's Five Year Strategy for Information Resources Management, 1989-1993 suggests that such responsibilities be assigned to specific individuals in all Bureaus as applicable. These individuals in each Bureau would then cooperate to strengthen the Agency's overall information resource management capability.

## 2. Improvement in Updating and Manipulating Africa Bureau Data

As shown in Chapter III, there has been a proliferation of electronic databases in the Africa Bureau. This rapid increase of available information raises new problems of how to organize for updating important databases, how to ensure optimum access to the available information, and how to manage the manipulation and use of the data becoming available.

A solution to updating and manipulating the Africa Bureau's growing information base will involve several parts. It is important to make someone directly responsible for the needed tasks of updating and manipulating data. These responsible persons could arrange guidelines for updating existing and new data sets, could work to create additional access to data to encourage its updating and use, and could seek to make access more efficient (perhaps by arranging for low cost updating) to encourage its exploitation. Other smaller ways to encourage better updating and use of Africa Bureau information would be to put the date and source on all data sets so that the baseline for the information is readily known. More distributed computer power in the Bureau would contribute greatly to improving the updating and use of available Bureau information. Finally, a contractor could be retained to assist the Bureau in updating and manipulating data where funds were available.

### 3. Inadequate Maintenance of an Inventory of Existing Data Sets

With additional electronic data sets being created every day in the Africa Bureau, it is easy to fall behind in maintaining an inventory of them. Placing a specific person in charge of maintaining the inventory of existing databases is the most important step that can be taken. Other actions to improve maintenance of the database inventory would be to:

- o Increase access by users to all the databases so that they will be used more; user interest will encourage a more up to date inventory effort;
- o Increase awareness of the databases by publishing a registry of them for use by Bureau and other A.I.D. staff; establish a users group to focus on existing databases.
- o Register all new databases for inclusion in the registry.

### 4. The Bureau's Hardware Configuration is not Optimum

A basic decision in any future information design will be the hardware configuration, especially in terms of mainframe versus personal computer development. Mainframes offer more centralized data, but are generally less accessible to users. PC's are more user friendly and flexible but are more decentralized, making information sharing more of a concern. Currently, both mainframe terminals and PCs are available in the Bureau.

#### a. Information Maintenance on a Mainframe is not Ideal for Everyone

In interviews, many people indicated that the solution to most of their problems would be to have access to a mainframe computer where all Bureau data would be stored and could be retrieved by each individual as needed.

One disadvantage of a mainframe is that it usually results in many files being maintained by people other than the users, as discussed above. A second is the limited number of computers in the Bureau which are currently linked into a mainframe. Of 28 people surveyed, 11 had unlimited access to an OIS wired mini-computer. The others indicated they had difficulty finding an OIS terminal to work on when they needed it.

Another reason to question the feasibility of relying primarily on a mainframe is one of access. Numerous bureau staff want and have requested access to the existing mainframe but have not been granted access privileges. Even if each access is gained, users must learn to take advantage of it. One of the most widespread unmet needs relates to the ability to obtain information not at the user's workstation which requires effort to access. Some of this information could be put

to access that information. While it is true that people are not encouraged to tap into the mainframe data bases, it is already possible in some cases to do so and the mainframe contains over a hundred programs and data bases which could be of use to professionals.

A mainframe solution could be used. It would have to be extremely "user friendly" and accompanied by an outreach program to show people its capabilities and how to enjoy them. Given the high staff turnover within the Bureau, this outreach effort would probably need to be permanent. There would also have to be a formal mechanism of feedback and evaluation of the system to assure that it met the needs of the users.

b. Information Sharing on Stand-alone PCs is Possible but Cumbersome

PCs provide the user with maximum flexibility in manipulating data to fit a particular need. Software is often more user friendly than that of a mainframe, yet powerful enough for the users needs. However, information sharing between stand-alone PCs is not as simple as when the information is centralized in a mainframe.

The recent increase in the number of PCs within the Bureau intensifies the need to develop information sharing skills and strategies for stand-alone systems. Currently, data is shared mostly by hard copy. Those with data bases either produce regular reports to share with colleagues or print ad hoc a hard copy in response to phone or personal requests. Most users who require data maintained outside their office insisted on a way of getting a copy of what they needed in a form that they could then manipulate with familiar software tools such as LOTUS 123 and dBase.

Creating a hardware connection of PCs through a network in New State appears to be costly, technically infeasible, and time consuming. One solution to the problem is to share diskettes although people need to be trained in mechanisms for transferring information and protecting data meant to be read but not manipulated. One office (AFR/DP) did share critical data during a fiscal year rush period by exchanging diskettes. While tedious compared with what the users prefer, they will probably employ the same method of sharing data again unless truly better alternatives, from their perspective, are found.

Another solution is to use telephone modems to communicate between computers. However, modems are not readily accessible because of limited availability or lack of knowledge in how they are used. AFR/DP is still waiting a modem requested over a year ago. The size of the data files to be shared in almost all the stated critical unmet information needs are small and are feasible to access by telephone. Few users in the African Bureau are aware of this form of accessibility for their immediate information needs. On the questionnaire, only three people (10 percent) indicated that they knew how to use modems and only eight others (27 percent) expressed any desire to learn how. Greater use of modems could alleviate some of the main complaints about

the present computer setup in the Bureau: the inability of stand-alone PCs to network. The use of telephone modems might also lead to the use of electronic mail and tapping into data bases outside the Bureau or the Agency.

c. The Mainframe and the PC Stand Alone Can Both Be Used

As noted above, both PCs and mainframes have their advantages and disadvantages. Any information strategy developed by the Bureau will need to capitalize on each systems strengths and address the weaknesses.

5. Training Needs Depend Upon the Strategy Selected

Future training needs in the Bureau will depend to a large extent on the strategic decision to be made regarding the management of information in the Bureau and with design improvements in the information system.

Increasing current levels of computer literacy can improve the accessibility of some information. But, training should not be focused entirely on computer based information tactics. Staff should also be prepared to use library, CDIE, and other information sources at their disposal. Africa Bureau staff should also learn to use or learn about facsimile, voice messaging, graphics, optical storage and retrieval and digital imaging. Some self-help training should be encouraged--brown bag user's groups could promote lateral communication about databases, computer skills and all other aspects of the information system.

Most people in the Bureau know basic word processing. In our survey of 39 people, 93 percent of the respondents knew the basics of document creating and manipulation and nearly as many could create a new document from parts of existing files. About half, 44 percent, would like to learn how to incorporate numerical information into a text document.

The arrival of many new PCs in the Bureau has created a demand for skills in using data bases and spread sheets. People are reasonably competent in database management. In our study, 48 percent of the respondents could create a database and maintain it. Lotus, often used for word processing, and dBase are the most widely known spreadsheet and database systems. The survey indicates that 41 percent of those surveyed would like additional training in data bases and spread sheets.

The general level of computer experience is high. About a third of those completing questionnaires have computers at home. Databases are not used to their full potential, with little querying of the data to make calculations or answer questions. Also, the database aspects of Lotus are under-used.

Most people learn their computer skills on the job by practice and asking more experienced colleagues to help them with practical problems. The Personnel Office reports that 65 AFR Bureau staff took

108 formal computer courses during 1987 and 1988 to date. The accompanying Figure 10 shows courses taken by AFR Bureau staff and the types of courses they have taken since 1982. Some people are eager to improve their computer skills because of a personal interest in computers. About one third of the people surveyed have a computer at home. Other people learn what they must to do their job but are not particularly interested in computers per se.

People report that they would use computers more if they had more time for training and to practice what they learn in courses. Several people reported taking a class in a particular software, but not really learning how to use it because they did not have time to practice it or did not need to use it immediately in their work.

Computer training can either be in particular software packages or in basic computer skills. Most training focuses on a specific software, such as Lotus spreadsheets or Wang word processing. Software packages are continually being upgraded so that people have to continually relearn them and transfer old data to new versions of the software.

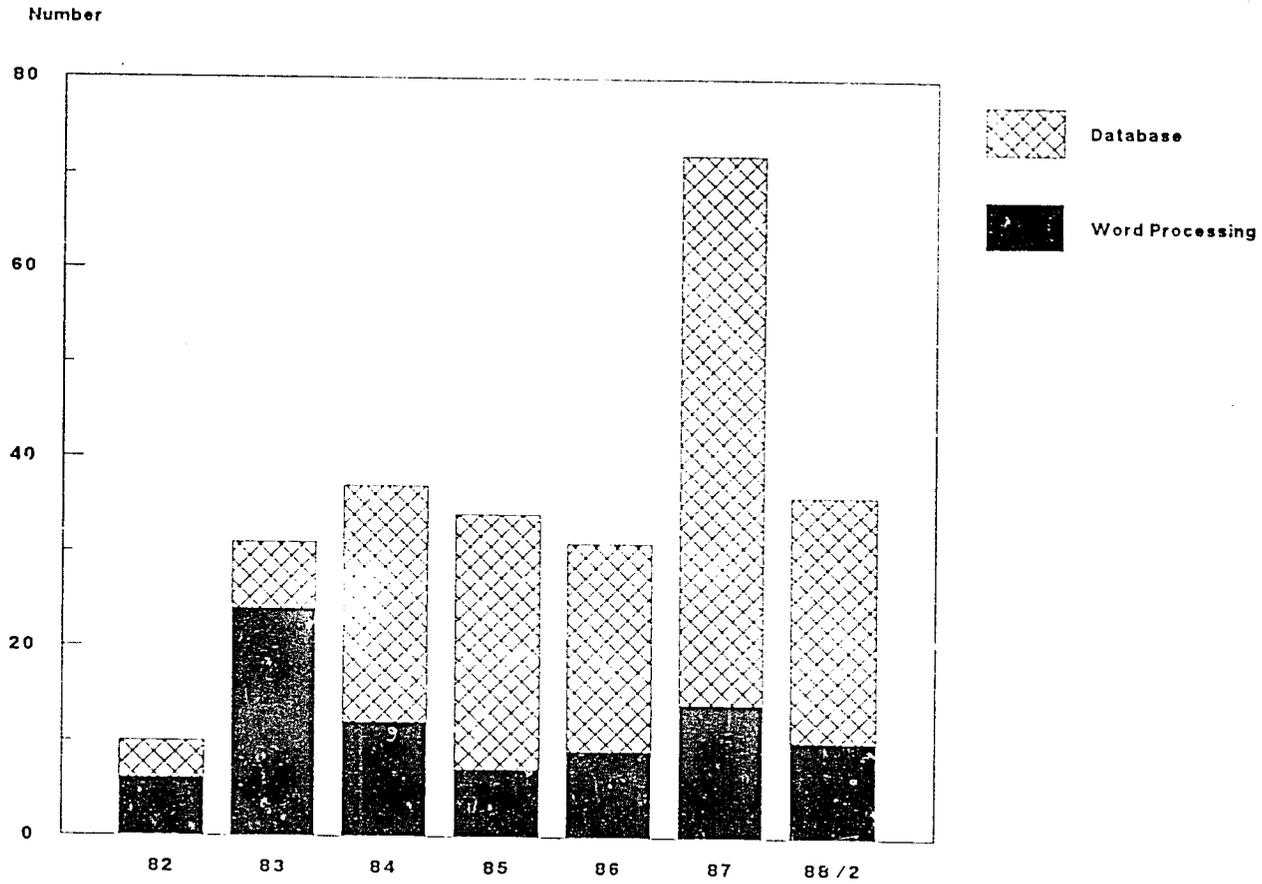
Since most skills are learned on the job, it is important that formal training be followed with practical applications on the job to build true competence. One aspect of this follow-on is to have sufficient computer capacity available to adequately support those building their skills. When computers are located directly on the desks of professionals, for example, most use it much more frequently than if they have to move from their desk to use it.

Another aspect of skill building is that it may be helpful to identify those staff within each office who have specialized skills, time and are willing to trouble shoot for colleagues who are working on particular applications. While busy professionals do not want to be interrupted constantly to solve software problems for learners, it may be desirable to have a professional or senior secretary in each office available for one-on-one training for a few hours each week during this transition period when Bureau staff are learning software applications to use with their new computers.

#### 6. Difficult Communication with the Field

For the Africa Bureau, communication with the field presents more of a problem than for other regional Bureaus. Many Africa Missions are isolated and telephone communication is uncertain. While many Missions may worry that increased communication will lead to increased demands by A.I.D./W, more diversity in systems of communication could save time. The current system includes telephone, official cables, telex, mail and, increasingly, facsimile machines. It does not include some currently available technologies such electronic mail, electronic bulletin boards, and modems for transferring long text documents. All of these are now in use by the private sector in a number of African countries.

Figure 10: Computer Courses Taken by Africa Bureau Staff  
By Year and Course Content / 1



/ 1 Source: PFM/PM/PSPE.

/ 2 Through August.

## 7. Accessing External Data Sources

Bureau personnel access most external data, at least electronically, through CDIE. External databases are mostly accessed by CDIE on behalf of the Bureau, although some Bureau staff do access directly Dun & Bradstreet, the World Bank and a few other external databases.

Africa Bureau staff have some good reasons for using CDIE to access external information. First, when the information desired falls into the purview of CDIE, the Africa Bureau person with the data requirement can supplement his/her own limited resources by engaging CDIE's. Moreover, CDIE's support is free. And, if the Bureau staff person is in a hurry and knows how to access the needed data through CDIE's system, he can do so directly from a nearby CDIE office.

Another reason for using CDIE, especially for commercial electronic data searches, is that its staff are specialists in searching for information. They can be and usually are much more proficient at searching electronic databases than a person who seldom does so. Not only does his skill reduce the time necessary to obtain a result; it also reduces the cost of the search measurably. CDIE staff also use interlibrary loan and other information retrieval mechanisms efficiently.

Many Africa Bureau staff do not have direct access to funds to use in searching commercial electronic databases. Since the process can become expensive quickly, the funding tap for electronic database searching in the Bureau is seldom turned on very wide. Also, staff sometimes cannot access a computer within the Bureau for outside searching easily or within the time frame desired. CDIE, however, has substantial computer capacity.

There are reasons Bureau staff want to and sometimes do access their own external electronic data sources. CDIE is in Rosslyn and can be slow in responding to client needs. Because CDIE is not the user, its work product is sometimes well off the mark. The user may have to iterate the effort several times over a lengthier period of time than desirable.

Given the above situation at present, it is logical for CDIE to continue to provide Bureau staff with access to outside data sources. In certain cases, however, the Bureau should be prepared to do its own searching for outside information. And, to facilitate this, the Bureau needs a designated person to provide support to staff in accessing outside information via computer. This external information "support" role is one of several the Bureau should amplify in future improvement of its information system when the Bureau's distributed computer capacity has grown substantially, it should review the role of CDIE again.

### D. Detrimental Consequences of Unmet Information Needs

There are two main consequences of unmet information needs:

- o Excessive time is spent chasing down information;
- o People are often forced to make critical policy or program decisions on the basis of incomplete information.

Most of the A.I.D. professionals interviewed believe they waste a lot of time trying to find the information they need or in reorganizing it into a format that meets their needs. While some offices, such as the geographic desks, are bombarded with requests for information (from Congress, other USG agencies, private groups or citizens), it would be hard to anticipate those questions or to prepare standard answers.

The issue of time comes up very frequently in interviews. Bureau staff has been cut drastically over the past few years. There are very few mid-to-lower level staff to handle repetitive administrative chores. One person characterized the Bureau as all chiefs and no indians. While Missions now take the responsibility for more project design and implementation, the Bureau's budgetary responsibilities remain high and, since the Bureau approves most PIDs and many larger projects, it is important that the decision process be based on the best information available.

A fair portion of the work of most people (and offices) is routine. Time could be saved if they had access to the information they need in database form and if they had the skills to manipulate that data into the form best suited to their needs.

A related consequence of limited time and lack of access to information is that professionals spend much of their time on "trivia", such as making several phone calls to find one figure, which leaves them with less time left to deal with higher order issues. People complain that they must attend project or program review without the time to analyze problems thoroughly, partly because of the difficulty in obtaining the data they need. While the task is accomplished in the end, people express dissatisfaction at having to cut corners because of time pressures and the difficulty in obtaining information to answer hard questions. This is costly to the Bureau in terms of lost time and less effective decisions.

## V. OUTLINE OF A PROPOSED AFRICA BUREAU INFORMATION SYSTEM

### A. Introduction

The Africa Bureau's present information system enables it to achieve important development purposes. However, two important trends will increasingly challenge the Bureau to improve the productivity of its information system. First, scarcer governmental financial resources will force A.I.D. to use all means to increase its productivity. Chief among these will be improved use of the information resource. Second, increasing information flows and the technology supporting them are creating new requirements and opportunities for development and management information. A.I.D.'s present and future progress and effectiveness in meeting its key objectives will be influenced deeply by how well it deals with these two trends. This assessment assumes that one important element of A.I.D.'s response will be improved management and use of information to increase the productivity of other available resources and of A.I.D. as a whole.

In this Chapter, suggestions are made for an enhanced information system in the Africa Bureau that will enable its staff to carry out their functions more effectively. We also have considered the relationships between subsystems in the suggested information system, administrative aspects of the information subsystems and priorities among subsystems with respect to improving the Bureau's overall information system.

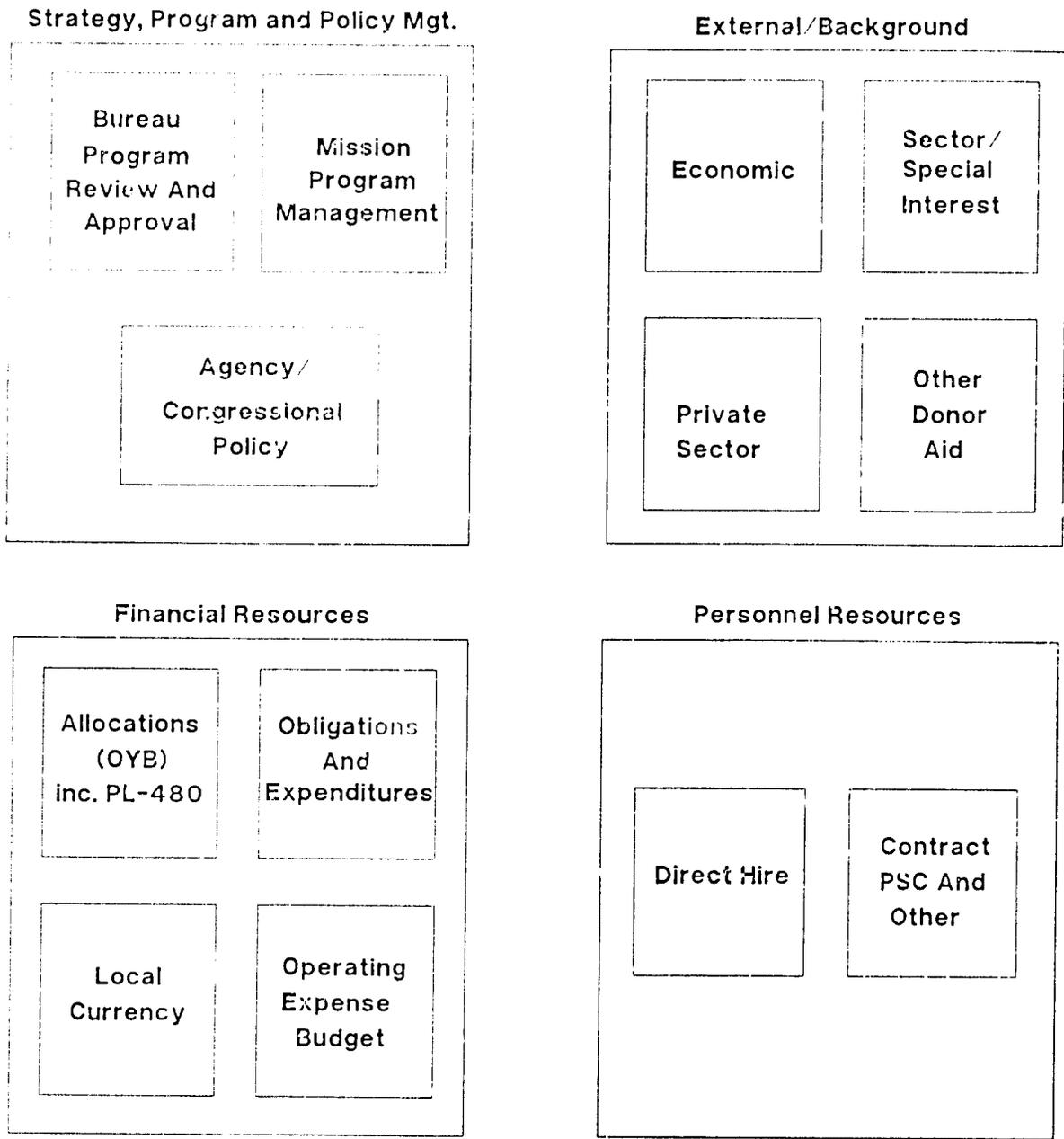
Improvement in the information system of the Africa Bureau will be achieved by filling unmet needs in each subsystem, by ensuring that interfaces between subsystems enable users to access information efficiently, and by filling important information gaps identified by Bureau personnel. Better administration of the information system will help achieve these improvements. Specific design activities in these areas will be necessary.

### B. Outline of an Information System Structure for the Africa Bureau

#### 1. Suggested information system structure

Figure 11 provides a suggested basic information system structure for the Africa Bureau. This group of information subsystems, or clusters, grew out of the analysis reported in Chapter III. It is integrally related to the Africa Bureau's actual information requirements in carrying out specific functions and processes. The overall system accounts for common information requirements among different Bureau offices and functions. The information within each subsystem is substantively related, frequently organized and maintained by the same office or producer, and consistently used by more than one office for the same or very similar purposes. This cohesion within each subsystem is demonstrable. It has provided the basis for

## SUGGESTED INFORMATION SUBSYSTEMS



**Figure 11: Suggested Information System Structure for the Africa Bureau**

aggregating the information clusters as shown in Figure 11. Other arrangements could be agreed upon and later design activities may lead to some changes in this proposed structure.

The specific information included in each subsystem is provided in Chapter IV and Annex 5. Again, this information content is derived from the analysis of clusters in Chapter III. Each of the subsystems has already been described briefly in Chapter IV and the descriptions are not repeated here. Areas within each subsystem that need attention to ensure improved information availability or accessibility for users also have been discussed in Chapter IV.

The "other" information subsystems shown at the bottom of the Figure include all non-common data produced and used by individuals or small groups. These subsystems include personal notes, electronic databases, tables, reports and documents, personal libraries, pictures and other data that--except in isolated circumstances--are not shared in a significant way with other users.

## 2. Constantly changing subsystems

The general content of each information subsystem will, over time, remain comparable to that already described in Chapter IV and Annex 5. But, the specific content of each will change according to the needs of users and producers, and the information sought or made available. As users increasingly access and manipulate the data in each subsystem directly, additional "information" will become a part of the subsystems. As new information becomes available from within or outside A.I.D., the content of each subsystem will change. This organic growth of each information subsystem is to be expected and, in any event, cannot be eliminated.

Unmet needs, like the content of each information subsystem, also will constantly vary somewhat. As users face different information demands, or perceive new possibilities for using data, unmet needs will change. As A.I.D. objectives or priorities shift, new information gaps may appear. New methods of obtaining or handling data will continually emerge, creating perceived or actual unmet needs among some users. This is especially likely to arise as A.I.D. information users relate to others in external environments who request or demand particular performance standards in dealing with information. For example, MDI, as it relates to private sector financial and corporate entities, will be "expected" to handle information with the same efficiency and quality as such organizations.

Thus, in planning and working toward an improved information environment, user- and producer-generated information growth and new unmet needs that arise must be taken into account. This means that, in "improving" the Bureau's information system, there will be no one-time solution, but a constant series of solutions. This reiteration of improvement(s), if done effectively, will enable continual re-use of the Bureau's information resources to address new development issues. Existing information will be used to attain new objectives, to account for new user requirements and producer inputs, and to ensure

consistently efficient and high impact applications of information as a direct development resource and as a means to enhance the productivity of other A.I.D. resources.

### 3. Relationships among subsystems

A priori, the suggested subsystems in the Africa Bureau information system are interconnected. Over time, all information in each subsystem is likely to be used in conjunction with data in one or more of the other subsystems. However, there are different levels of relationship between subsystems. Very important interconnectedness between subsystems is obvious in some cases; less important relationships are apparent among others which seem to be more discrete in both content and use.

Where major subsystem interfaces exist or are expected to develop, an important nexus or grouping of information (and related resources) occurs. As pointed out later, such groupings of subsystems occur naturally in the Africa Bureau around several central functions. This natural combination of data and intelligence about it is said by some to create a Strategic Information Unit (SIU).<sup>1</sup> Such a unit is an environment with defined purposes, a specific control structure, and a related set of information resources, all connected by the common data needs of core users. In manufacturing companies, for example, manufacturing planning and control, product and process definition and general business management emerge as strategic information units.

Interfaces between subsystems in SIUs become progressively transparent. These strategic information units tend to arise proactively. They frequently forecast where the organization or its information system is heading in the future. Not established for a specific time interval, they exist only for as long as they meet user needs. Their specific benefits are primarily reduced information costs and increased information responsiveness in meeting changing user requirements. If these organically integrated units are to be nurtured, information management must account for and support them.<sup>2</sup>

Relationships between subsystems are important for two main reasons. First, when interconnectedness between subsystems is substantial, it is appropriate for the information system to support data accessibility and comparability between those subsystems to a high degree. Such support enables information needs that draw upon several subsystems seriatim or simultaneously to be met more efficiently and helps maximize the impact of available information resources on A.I.D.'s other resources and objectives. Second, design of an improved information system needs to account for the degree of relationship expected between subsystems.

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<sup>1</sup>Appleton, Daniel S., "Information Asset Management," Datamation, February 1, 1986, p. 74.

<sup>2</sup>Appleton, pp. 74ff.

Subsystems suggested for the Bureau's overall information system can be classified by the degree to which their information seems to be either discrete and independent of other subsystems or more interconnected. Subsystems for which information content and use appears to be more independent include economic, business, other donor aid, local currency, OE budget, direct hire personnel, and contract resources. Subsystems among which there is a higher degree of interconnectedness are sector/special interests, allocations and OYB, project obligations and expenditures, Agency and Congressional policy, Bureau review and approvals, and Mission program management. While improved interfacing can be sought between all subsystems, special attention is required by those with the higher degree of interconnection.

Another way to classify the suggested subsystems is according to their similar content. The four major groupings--external/background, financial resources, personnel resources, and strategy, policy and program management--shown in Figure 13 constitute such a classification. These categories are logical, but they do not always indicate substantial connections between subsystems with similar content. For example, special sector information may not be strongly connected to business conditions or other donor aid, even though the data in all these subsystems has substantial commonality.

Perhaps the best way to classify subsystem relationships is in terms of the activities or functions they support. This latter classification is consistent with the matrices developed in Chapter III. It links information requirements within subsystems with the actual work of the Africa Bureau. It points out the importance of the information "system" in meeting significant information needs. And, it highlights interfaces between subsystems that are of prime importance in achieving key Agency objectives. In this context, relationships between subsystems take on practical meaning and solutions to unmet information needs within and between subsystems lead to specific desired outputs.

Figure 12 presents examples of important Africa Bureau activities and the major information subsystem support required by them. Each of the functions shown illustrate that key concerns, including new emphases, of the Africa Bureau usually involve information from more than one subsystem. Dealing effectively and efficiently with these functions requires not only effective management of individual subsystems. The interfaces between information subsystems also must be understood and managed to reduce unmet information needs, including information gaps, and improve information support for high priority Bureau objectives and activities.

A supplementary means of classifying subsystems is by the principal kind of information problems exhibited by each. This classification helps focus future design activities on key problems affecting relationships between the subsystems. Table 8 shows the subsystems that share significant information gaps, incomplete and out of date information and other important unmet needs.

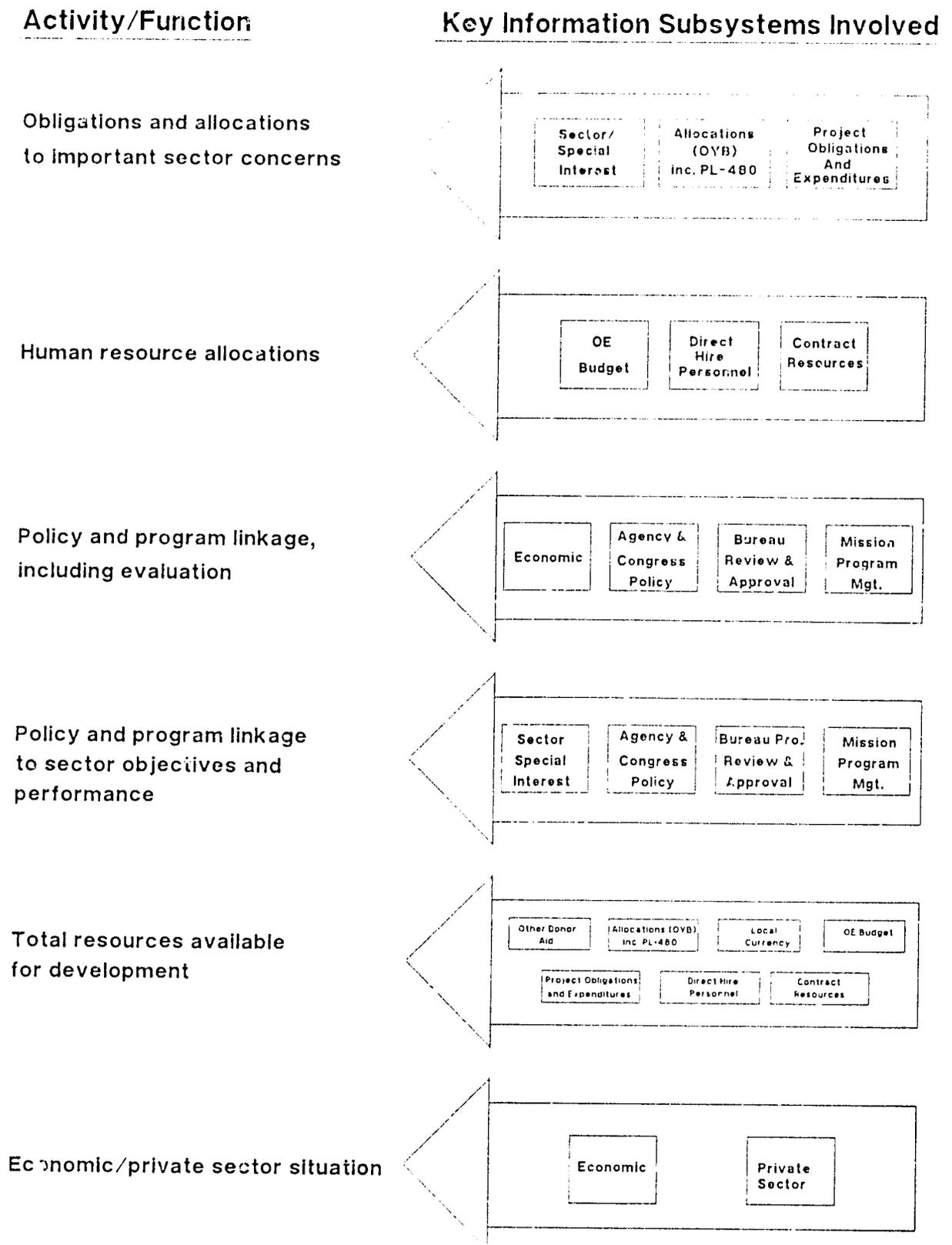


Figure 12: Examples of information subsystems involved in key Bureau activities

Table 8: Information Subsystems by  
Major Unmet Information Needs

<u>Subsystem</u>	<u>Major Unmet Needs to be Addressed</u>
Significant Information Needed	-Economic-Sector/special interests -Other donor aid
Incomplete and/or Out of Date Information	-Sector/special Interest -Allocations (OYB) -Project Obligations and Expenditures
Sensitive or Hard to Access	-Private Sector -Direct hire personnel -Contract resources
Data Too Aggregated	-Economic -Sector/special interests -Private Sector -Other donor aid

#### 4. Administration of subsystems

Table 9 shows the principal responsible offices in the Africa Bureau and A.I.D. for each suggested information subsystem. These offices usually produce or otherwise organize the information in the subsystems, primarily for their own use. Tables 5 and 6 and Annexes 4 and 5 provide more data on which A.I.D. offices produce specific information.

The role of principal responsible offices in developing and managing subsystems to serve Bureau or other A.I.D. users is usually not definitive, for other users or the producer office(s). The degree of maintenance and further development of the information in each subsystem varies substantially from one to the other. Other users' access to subsystem information and to the resources of the responsible office for help in obtaining and manipulating it is often very limited. Little custom packaging of subsystem information is undertaken by producer offices for other users. Relatively few resources are allocated directly to subsystem or database management on behalf of "other" users by responsible offices. Problems experienced by other users of information frequently are not considered to be the responsibility of the producer office.

A specific plan for administering subsystems needs to be developed within the Bureau. Assignment of responsibilities for elements of the overall Bureau information system, however, should flow from the information strategy of the Africa Bureau. This strategy, for example, may suggest organizational changes to manage information better; it could provide for additional positions in the Bureau dealing primarily with information. Once these and similar issues are considered and resolved, individuals or offices can be assigned to the information responsibilities set out in the strategy.

As top managers in the Bureau, some of your specific information needs, including the form and volume of data needed, have not been identified sufficiently or made clear to staff. Many of your information requirements are different from those of other A.I.D. personnel and numerous of these are not now being met routinely. Frequently, you receive too much information. You want more of it to be analyzed or synthesized to enable you to understand and use it more quickly and effectively. Sometimes you do not receive the information you need.

Your specific data needs often occur in categories that cross-cut information subsystems. This includes "comfort" information, internal operations information, progress information, early warning and problem information, etc. The link between top management and this information is not well developed in the Africa Bureau. Administration of the Bureau's information system, including that of each subsystem, needs to account for these cross-cutting information needs of top management more fully. In part, this implies that responsible offices will identify and meet key information needs of top managers. It also implies an information environment where offices are proactive, pulling

Table 9: Subsystem of Information Needs by Principal Responsible Office

<u>Subsystems</u>	<u>Principal Responsible Offices</u>	
<u>External/Background</u>	<u>AFR Bureau</u>	<u>Other AID</u>
1. Economic	DP/EAR	PPC/CDIE
2. Sector/special interests	DP/PAR, DP/PPE, TR	S&T, FVA
3. Private Sector	MDI	PRE
4. Other donor aid	DP/PPE	PPC/DC
<u>Financial Resources</u>		
5. Allocations (OYB)	DP/PAB	PPC/PB
6. Project Obligations and Expenditures	DP/PAB	FM
7. Local currency	DP/PAB	FM
8. OE budget	CONT, MGT	FM
<u>Personnel Resources</u>		
9. Direct hire personnel	MGT	PFM
10. Contract personnel resources	PD, GEOG OFF	M/SER
<u>Strategy, Policy and Program Management</u>		
11. Agency and Congressional policy	DP/PAR	PPC, LEG
12. Bureau review and approvals	PD, DP/PAB	GC
13. Mission program management	GEOG OFF, PD	

information from ongoing data streams in each subsystem and packaging it in interesting ways for the Bureau's key managers. Some of this information will follow a timely consistent pattern; some will be unique.

#### 5. Priorities for improving information subsystems

Table 10 shows suggested priorities for improving each information subsystem in the Africa Bureau's information system. The criteria for determining these priorities were:

- o Large developmental payoff in the long- or short-term;
- o Major information system payoff in the long- or short-term;
- o Of major importance to top management;
- o Easy to remedy;
- o Small resource expenditure necessary to remedy;
- o Large problem;
- o Significant support of A.I.D.'s overall or sector strategies;
- o Highly complementary to A.I.D. efforts; and
- o Especially timely.

Most criteria are self explanatory. However, the criteria of developmental and information system payoff may need explanation. By developmental payoff, we mean additional productivity from existing resources. Thus, if an important unmet information need can be filled and filling it is likely to increase the effectiveness of A.I.D.'s resources in development terms, the criteria of developmental payoff would be met. The information system payoff criterion means that the filling of an unmet need will increase the effectiveness of the Bureau's information system, either in efficiency or in increased impact of information on the productivity of other A.I.D. resources.

Unmet needs themselves were not included as a criterion. As shown in Table 10, they comprise the "condition" to be improved by remedial action. It is the result of this improvement in each subsystem--the filling of unmet needs --that allows the criteria above to be met.

Several of the criteria above applied to each information subsystem. However, those considered to be the most important were used to create the priority rankings in the Table.

The highest priority subsystems for action have major unmet needs in the form of unavailable information. Filling these information gaps will require strong support from top management, additional resources in a time of resource scarcity, and cooperation throughout the Bureau. Highest priority was given to these tougher problems because of the

Table 10: Suggested Priorities for Improving Information Subsystems

Priority	Subsystem	Major unmet needs to be addressed	Major criteria met for priority ranking
1	Bureau review and approvals	Inadequate evaluation data, lack of timeliness and accessibility	Large development payoff (evaluation) Large substantive problem
2	Mission program management	Inadequate country program performance data (gap), lack of country program impact data (gap), inadequate access to Mission documents, lack of NPA implementation status and impact (gap)	Large development payoff Major information system payoff
3	Economic	Lack of country economic performance data (gap), out of date and inaccurate information	Major importance to top management
4	Sectors and special interests	Incomplete agricultural sector data (gap), lack of food aid data (gap), insufficient performance data (e.g., AIDS) by country and region (gap)	Significant support of strategy Especially timely (food aid)
5	Project obligations & expenditures	Untimely obligations and PAO data; no LOP data in PAIS; pipeline data inadequate	Small resource expenditure necessary to remedy Affects many users
6	Allocations (OYB)	Lack of current, accurate OYB and CY/TN data	Easy to remedy Small resource expenditure necessary to remedy
7	Direct hire personnel	Lack of data on special experience by sector such as drought (gap), out of date information Lack of travel and meeting notice	Easy to remedy
8	Private Sector	Scattered external data, as yet uncollected and organized for use	Significant support of strategy Highly complementary to AID efforts
9	Contractor resources	Incomplete and inaccurate data	Especially timely (new contractor database) Increasing importance to top management (shallow staffing)
10	OE budget	Lack of detail, monitoring against plan	Easy to remedy Small resource expenditure necessary to remedy
11	Agency and Congressional policy	Untimely, inaccessible data	Major importance to top management
12	Local currency	Insufficient detail, including sector breakdowns	Small resource expenditure necessary to remedy
13	Other donor aid	Lack of qualitative information on other donor assistance (gap), untimely and incomplete data	Important information system payoff

imperative the Bureau is facing to justify program investments and priorities in the light of actual country and sector program performance.

Mission program management is an example of such a high priority subsystem. In informational terms, this is the fulcrum of the Bureau's effort to get control of the measurement of its overall performance. It is at the cutting edge of what Congress wants to know. Without sound data in this area, it is hard to determine where and how far the Bureau's efforts are leading. And, the Bureau is subject to Congressional and A.I.D. programming and budgetary pressures. With accurate performance data, the Bureau gains more control of its development agenda and can push for appropriate resource levels to pursue it.

As noted in Chapter IV and in Table 10, this subsystem has some of the largest information gaps to fill. The key to doing so will be development of a systematic way to collect the information needed. New methods of measuring progress may well be involved. Additional resources will be necessary. Multiple information producers (e.g., the Missions) and users will be included in the effort and interfaces between them must be carefully thought out. The end result is intended to be an enhanced information subsystem that helps guide A.I.D.'s development programming based on measurement of actual performance. Efforts that produce few results will be pruned; those that succeed substantially will be provided with additional resources. In this way, improvement in this information subsystem will directly enhance the productivity of A.I.D.'s available resources.

Lower priority subsystems involve problems that are easier to remedy and which require smaller expenditures of top management time and financial resources to obtain significant improvement. Some subsystems were given a low priority because few important problems were associated with them. A low ranking in this context, however, does not reflect the relative importance of the subsystems.

An example of such a subsystem is project obligations and expenditures. The central problems here are lack of current, accurate OYB and CN/TN data. This data is very precise and frequently extremely important. Sometimes the Agency emphasizes effective financial control as much as effective programs. So, as in accounting the first issue in working in this subsystem is to get control of the information at that level deemed most appropriate. This alone will not be an easy task. Many users obtain information from this subsystem, and many use the information differently. These multiple uses create special unmet needs, as indicated in Chapter IV. However, in this subsystem there are some simple solutions (e.g., having one person responsible for obtaining and carrying out pipeline analysis for the Bureau). Work with FM is longer range. But standards can be developed to identify the source of data in key reports and its timeliness. Cables could be abstracted and placed on-line.

### C. Issues for Further Design

Improvements in the Africa Bureau's information system are needed, appropriate and feasible. Design of such improvements can be undertaken slowly, dealing with but a little at a time. Or design activities can proceed more rapidly and involve a larger portions of the Bureau's system. No matter the approach taken, several important broad issues will need to be considered at the threshold of the next design activity.

#### 1. Value of information and quantity of other resources to be committed to its development and use

Central among these issues is the value that the Africa Bureau will place on information and the financial and human resources it will commit to meet user demand in important information areas. A.I.D. and the Africa Bureau are lagging behind other organizations, especially the private sector, in recognizing and using information effectively as a resource. A.I.D.'s top management must strongly value information in the Bureau's work and support its management and use as a resource to maximize the impact of information on A.I.D.'s productivity. This will require making information management an important part of Bureau activities and including information functions in individual job descriptions, performance reviews, and financial incentive structures. Advanced information technology will need to become a part of most work places. Quality information will need to be increasingly demanded by management and applied in all Bureau functions.

Top management will have to provide the resources required to improve the Bureau's information system to the desired level of performance. As indicated in Figure 5 in Chapter IV, some of the Bureau's most important unmet needs involve data gaps. Filling these is a high priority. It will require additional resources for the Bureau's information system and cooperation by Missions and many throughout the Bureau. However, as also indicated in Figure 5, the implications of not filling these central unmet needs include a lower level of Bureau performance and further time lags in using information to enhance the productivity of other available resources.

#### 2. Degree of centralization and standards and guidelines

The degree of centralization in the Africa Bureau's information system is another issue to be resolved at the threshold of additional design activity. The decision about centralization turns on the degree of authority to be exercised by any designated supervisor of a mainframe or of standards and guidelines for producers and users in the information system. A centralized mainframe computer need not imply significant centralization. Such a machine can be a "server" in support of many individual work stations, upholding networking and maintaining important common data for all information users. Or, it can play a pivotal role in creating a more centralized information management model.

Given the rapid growth of distributed computer power in A.I.D. (and in other organizations), substantial centralized control is increasingly difficult and usually unwise. In A.I.D. and elsewhere, the trend in the information environment is accelerating decentralization. This circumstance does not lend itself to strong centralization, especially in the arena of information. However, even in a centralized information model, there is substantial need and room for the imposition of common standards and controls which will facilitate information development and flow. An information supervisor who is able to manage networks of users, including their communication systems and policies, is likely to serve the Africa Bureau's future needs best. Such a supervisor will play an increasing role in facilitating interfaces between users and information subsystems without imposing centralized control. For example, s/he could manage an electronic database register in the Africa Bureau and provide protocols to ensure maximum compatibility between users and the databases. The supervisor should, as is the case in most major organizations today, give attention to the development of common guidelines and procedures to facilitate the usefulness of A.I.D.'s information resource.

### 3. Ease of access

The ease with which users access information is another issue to be considered before major design efforts are undertaken. Users may access and manipulate their own data, never depending on centralized information staff to prepare analyses or reports. Or, as is sometimes the case in A.I.D. now, special information staff can produce reports or databases for others. Today these reports are frequently issued in hard copy, providing no opportunity for the user to obtain or change the original data to better suit his or her needs. Ease of access can be strongly encouraged by provision of LANs, inter-office mail, fax machines, copy machines and a good messenger service. Or, as is true in the Africa Bureau today, stand-alone PC's can be provided, sharply limiting access to centralized and distributed data. Ease of access is rapidly becoming inexpensive and reliable. Most of all, it provides for extremely rapid information retrieval and distribution. Given the quantum changes likely to occur in access in even the near future, there is small chance to curb it successfully and little reason to try to do so.

Communication with Missions, now rather difficult in some Africa countries, will become increasingly easier. Ease of access between the field and the Bureau in Washington needs to be encouraged. Computers, faxes, and other devices will compete with phone and cable traffic more and more effectively, subject only to security concerns. As the existing "cable" constraint diminishes, the Bureau's flow of information between the field and Washington will increase substantially.

### 4. Training implications

Training is another threshold issue to be considered prior to launching major design activities. There already is an important

critical mass of Bureau staff who have basic computer skills, especially in word processing, but also in other software. However, if major emphasis is placed on computer applications in managing the information of the Bureau, training requirements will increase accordingly. No substantial increases in training may arise from additional design of the Bureau's information system. Even in that event, important quantities of computer training will need to be undertaken in the Bureau over time.

The training necessary for increased information management and use was found to be desirable by Bureau staff. Staff members have learned to deal with electronic information; they are willing to learn more. Given the progress made already, it is unlikely that any affordable enhanced information system will overtax the capacity of Bureau staff to absorb effectively the computer training required. Even the extra expense incurred will probably be paid for many times over in higher productivity and lower cost more relevant information.

#### 5. Management and organization implications

The extent to which A.I.D. is prepared to manage and organize information as a resource needs to be determined prior to further design efforts. If information is to be considered a full resource in its own right (see the discussion in Chapter II) and rapid development of the Bureau's information system is envisioned, additional information administration will be needed. If the strategy is to be slow improvement of the Bureau's information environment, less intensive administrative development will be necessary. In either event, the Bureau needs to strengthen its information administration to help manage its information system. In particular, data administrators need to be given specific and well understood responsibility for information management.

Information administration will be needed at several levels--in offices, in the Bureau, and at other levels in A.I.D.. Administrators of information in the Africa Bureau will need to interface effectively with those managing information in other Bureaus in A.I.D. and elsewhere. This information management activity should be built into activities, job descriptions, and Africa Bureau objectives. It should be included, where appropriate, in staff performance evaluations. Additional training for administrators will be necessary and should be made a part of each individual's training plan.

#### D. Suggested Next Steps

Following this information needs assessment, we suggest that the next step be the development of an Africa Bureau information strategy. A second step is more detailed design of improvements in the existing information system.

The proposed strategy will specify the Bureau's information objectives in relationship to its development requirements and determine the means for achieving them. It will identify and resolve information related issues: The relative value of information,

including its integration with other resources to help define and achieve A.I.D.'s development goals; the institutional organization necessary to develop and manage the Bureau's information; the technological approach to be used in providing for information development, management and use; development and use of common guidelines regarding the information resource; the degree to which available financial and personnel resources will be devoted to information activities. Creation of the strategy will support well planned development of the Bureau's information system and reinforce the careful phased approach the Bureau has begun in seeking to improve its information environment. Most importantly, taking this next step will continue the essential process of realizing the full potential of information as a resource in the Africa Bureau.

The second step--detailed design of improvements in the existing information system--will include several parts as intimated in the scope of work for this assessment in Annex 1. It can begin with very small or quite substantial design efforts, depending on need and the resources to be committed to the effort. For example, if a low budget, slow progress approach were adopted in the above strategy, the first design step might be to develop a detailed training plan for Bureau personnel. This plan could help create additional information skills and understandings that would pay high dividends in the daily operation of the Bureau. Or, a larger effort could focus directly on filling priority unmet needs in key subsystems identified earlier in this Chapter V.

In part, the activities to be pursued in this second step will stem from development of the Bureau's information strategy, if such a step is undertaken. However, a detailed plan for detailed design activities also should be developed. Such a work plan could readily be developed by the Africa Bureau Working Committee on Data Systems. It would include specific design priorities, resources required to undertake them, a time schedule and specific check points. The planned design steps would initially focus on filling unmet needs in priority information subsystems. The analysis and actions required to deal with these high priority unmet needs would soon lead to consideration of most aspects of the total information system.

#### E. Recommendations

- o Top management should treat information as a key resource within the Bureau and direct at once the substantial additional development of its information system.
- o An information strategy should be prepared by the Bureau as the next step in enhancing its information system.
- o A detailed design for improvements in the existing information system should be undertaken by the Bureau after its strategy is agreed upon.

- o Top management should staff information activities in the Bureau with specific individuals whose roles are built into their jobs (e.g., the suggested staffing in IRM's Five Year Strategy for Information Resources Management).
- o Standards and guidelines for information producers and users within the Africa Bureau and in other A.I.D. Bureaus should be established by designated staff to improve the productivity and efficiency of the information system.
- o The Bureau should concentrate first on filling the high priority unmet needs identified in this assessment.
- o Staff training and practice in information production and use should be increased. Training should include use of advanced technologies (e.g., computer hardware/software and facsimile machines) and of the library, CDIE, and other information resources.
- o Bureau staff should participate in developing other A.I.D. databases and information systems of concern to the Africa Bureau.

ANNEX 1.

Africa Bureau Information System  
Scope of Work

AFRICA BUREAU INFORMATION SYSTEM  
SCOPE OF WORK

A. The Problem

Some offices in the Africa Bureau have spontaneously developed their own data sets to compile and analyze information specifically needed by that office. Other offices have not developed their own data sets to suit their own purposes, nor do they find existing data sets readily available. In addition, there are no widely accessible definitive data bases covering core elements of the information needed to minimize the proliferation of data sets that are often overlapping and duplicative. The result is an inconsistency in the kind, quality and availability of information available across the Bureau.

Although existing data sets are useful to the users of the information the development of office specific data sets is uneven throughout the Bureau and there still exists a need for definitive databases containing core information needed by most offices in the Bureau. Until more coherence and organization are brought to bear, the Bureau will continue to seek information in an unsystematic, unreliable, and inefficient manner which handicaps our ability to report and make good management decisions.

In order to carry out its mandate more effectively, the Africa Bureau needs: 1) more timely, accurate information for management and operational analysis, decision-making, and reporting purposes, and 2) an easily accessible information system for now and the future which includes a historical record and a systematic "context" for our efforts.

B. Background

As complexity builds and workloads and reporting requirements increase, the Africa Bureau must focus on its information management capacity and explore options to facilitate the attainment of the above ends. We need to thoroughly inventory and assess what capability presently exists, determine what is needed in addition to the existing system, and then build from what currently exists to meet our information needs throughout the Bureau. This is particularly needed in the collection and dissemination of core information.

Currently, the Agency has plans to install a mainframe for the Africa Bureau in the basement of the State Department. Once installed, it will be possible for all computers in the Bureau to be hooked up to the mainframe, and provide the capability to network among Bureau offices, with the rest of the Agency, and outside the Agency. At this time it is unknown when the mainframe will be installed and available.

Acquisition of hardware and software continues; however, acquisition is delayed by a restriction on operating expense funds. Staff, therefore, continue to experience a severe shortage of terminals and work stations. The ratio of staff to word processors and computers varies greatly within the Bureau and among divisions within some offices. There is a need, therefore, to better assess and prioritize the distribution and location of terminals and work stations.

In addition, the level of training in computer and word processor "know how" is very erratic leading to inefficiencies in their use and under productivity of personnel. There is a need to conduct a training assessment to outline training needs by hardware and software availability, office information needs, and personnel responsibilities.

Although uncertain, we do expect to eventually have the automation required to support an information system. We do not, however, have a clear idea or concept of a coherent information system for the Bureau. We need to think now about an efficient system of information for the Bureau that will be supported by the already planned automation system.

We need to also think ahead about eventually linking up to field missions electronically. The software and protocols for networking need to be thought out with input and ideas from the field. The concern at the moment is to think of information systems development within the Bureau with provisions for eventually linking up with the field, when the funds and technology make this possible.

We would like to plan design and implementation of an information system in stages, beginning with an assessment of information needs. That would be followed by a preliminary design for a system that is acceptable to all the offices in the Bureau. Such a design, once completed, would then be followed by an internal system design, automation information and, finally, applications development. An internal systems design will produce a thorough description of the data files, programs, analytical requirements and other internal specifics of the system to a level where they can serve as a guide to actually programming and developing the data base(s). Application development will be a continuation of the internal systems design by the actual custom development of the information system.

#### C. Objectives of the Study

This contract is limited to only the first phase -- an information needs assessment. The objective of this phase, therefore, is to conduct a Bureau information needs assessment as a first phase in the development of an integrated, consistent, and timely information system within the Africa Bureau to facilitate exchanges and use of data between Bureau offices, other Agency offices, and field missions.

The components of this phase will include the following tasks:

- A. Determine Information Requirements By Office
    - Identify management analysis and decision making tasks
    - Identify and prioritize information needs for analysis and program management decisions and reporting
  - B. Inventory and Assess Existing Information Sources
    - Prepare an inventory of source documents and reports
    - Prepare an inventory of existing data sets
  - C. Inventory and Assess Bureau Staff Expertise in Managing Automated Information
  - D. Identify Unmet Information Needs by Office
  - E. Prioritize Bureau Information Needs Vis-a-Vis Planning, Program Operational Management Decisions, and Reporting Needs
  - F. Outline A Proposed Information System and Identify and List Functions of the Proposed System. Define the Implications of Information Needs in Terms of a System.
  - G. Identify Training Requirements Implied by a Proposed Information System
- D. Scope of Work

\* The contractor shall interview a broad sample of Africa Bureau employees, representative of all offices in the Bureau, to ascertain each office's function, its related major management analysis and decision making tasks, and its subsequent information needs to conduct analysis and make decisions. To assess and identify specific information requirements, the contractor should be prepared to assist staff interviewed to articulate his/her job function, type of actions and decisions regularly reporting requirements, and information needed for completing those tasks.

\* Identify key management analysis and decisions required in planning and administering an effective development program for the Africa Bureau. This includes a review of the specific requirements of each office in the Bureau. Include in this process, a look at using existing data sets in new ways to meet information need requirements.

\* Identify problems in conducting analysis, making decisions, and reporting that stem from a lack of adequate information support, and develop specific recommendations for steps to resolve those problems.

\* Identify major data sets required to support decisionmaking and policy/management analysis. These data sets form the basis for future data file structures. In conducting this element of the contract, research other existing data bases in the Agency that might be used or duplicated by the Bureau.

\* Define common interests/needs that exist between offices, and then identify the critical elements necessary to comprise core data sets.

\* Assess the most efficient means for accessing external data sources, i.e. through CDIE or through Bureau capability.

\* Recommend a basic information system structure that would be fleshed out or developed during the detailed system design phase of the project. This would include a description of the major sub- systems that need to be developed, the relationships among sub- systems, and any specific data handling requirements that may be needed. Also specify the priority of various components of the system so that development can occur in an orderly, sequential fashion.

Contractor recommendations should also address staff training needs vis-a-vis a propose system, a brief outline of the means for updating and manipulating data once the system is in place, and means of maintaining an inventory of existing data sets.

In conducting the interviews, the contractor will be gathering information on existing data sets; therefore, the contractor is requested to, at the same time, collect sufficient standardized information to enable them to prepare an inventory of existing data sets. The contractor should include those data sets in the Africa Bureau and the rest of the Agency that are key and frequently used. The inventory shall include, but not be limited to, the following:

\* A brief narrative description in laymen's terms of the functions the data systems perform, sources of the data, and frequency of use;

\* Suggested uses of the data set for management decision making and reporting;

\* The size of the data set(sa) i.e., the number of records it holds; period of time covered by the data set; and frequency of data;

\* A description of the format and an example;

\* The "maintenance" schedule, i.e., how frequently the data must be updated in order to be useful;

\* A sample record with definitions of the variable and units of measure;

\* A sample report with associated queries;

\* A description of the hardware and software the data set is maintained on;

\* The office in which the data set is located and who manages the system ( include location and telephone number) ; and

\* Indicate whether the data set is AID-generated or managed by others for AID purposes.

The end product, therefore, should include not only an outline of a proposed information system structure, but also an inventory of existing data sets.

### Methodology

This study will assess information needs and recommend an outline of an information system for the Bureau. Some of the contractor's recommendations may be controversial, or require major commitments of resources (time, staff, budgets) on the part of the Bureau. Therefore, successful eventual implementation will depend on a participatory process in conducting the preliminary information needs assessment as well as in the design of the system, so that the final design reflects the majority of senior management thinking.

Because there are varied, competing and overlapping interest within the Bureau, a great deal of discussion and negotiation will be required to bring the various offices to a consensus on the priority of information needs and a proposed outline of an information system. Therefore, at key decision points, the contractor should facilitate discussions amongst Bureau senior managers as to what will be included in the information system and how the system should be outlined to best serve the information needs of the Bureau. The final report should reflect a consensus within the Bureau.

The information system assessment must address such issues as the roles of various Offices and Divisions in the information system process; centralization versus decentralization of the main data base; the priority of various elements of the information system (including a recommendation of which subsystems should be developed first) and possible organizational changes required to develop and manage the system.

### Contractor Qualifications

Three consultants will be required to design an information system for the Africa Bureau. These consultants will have expertise in information systems analysis and in structuring information systems. The expertise sought will include the following:

- Management Analysis with organizational behavior and facilitation skills. This analysis will play a strong role in defining the objectives, organizational structure, and functions of the Africa Bureau and the various offices within the Bureau, their related information needs, and the interrelated information requirements among Bureau Offices.
- Social Science Analyst with experience in data base design and a management. This analyst will pay particular attention to assisting staff define and classify required information needs.

- Information Systems Analyst who will outline a proposed information system drawing heavily on the work of the Management and Social Science Analysts.

The contractor selected will also show the following abilities or experience:

- Consultation with other large bureaucracies to assess information needs, and design and organize management information systems;
- Demonstrated ability to identify critical decisions and explicitly model those decisions prior to design of a MIS.
- Demonstrated ability to design a MIS that encourages cross functional cooperation among the offices of a large administrative unit;
- Demonstrated ability to design sub-systems within systems to accommodate managerial as well as analytical data needs; and
- Demonstrated ability to facilitate consensus among competing interest towards acceptance of a final product.

#### The Report

The final report shall contain:

- 1). A summary of the functions, critical analysis, decision making and reporting requirements of each office made by Bureau offices and staff that require informational support. identify and link information requirements with the office or offices within the Bureau that require the information for decisionmaking and reporting.
- 2) An assessment and inventory of existing data sets used by the Africa Bureau and currently available elsewhere in the Agency. The inventory shall include key, frequently used data systems and programs belonging to other Agency offices which are relevant and available for use by Bureau staff. Indicate where the data sets are located, who manages them, and how frequently they are updated.
- 3) identification and assessment of the need for currently unavailable information critical to reporting and decision making within the Bureau. Included recommendations for design of new data sets or classes and indicate their priority.
- 4) Assessment of staff expertise regarding use of automated information and recommendations for training implied by a proposed information system.
- 5) Outline of an information system for the Bureau based on the assessments requested above that will allow for minimal duplication of data, easy access to information, and an ability to report and make critical management decisions more effectively.

6) Recommendations for updating the Africa Bureau's information system inventory of data sets.

This contract will be managed by the Africa Bureau Working Committee on Data Systems with ultimate responsibility residing with AFR/DP/PAB. One week from the date of contract signing, the contractor will meet with the Africa Bureau's Working Committee on Data Systems to present for approval a preliminary questionnaire that is to be administered to Bureau staff. The offices and staff to be interviewed will have been identified in cooperation with the Committee. In addition, the contractors will furnish a workplan of how they plan to meet the contract objectives, and an outline of the final report. The workplan should indicate a tentative schedule of meetings with senior Bureau managers. Nine weeks from the date of contract signing, a draft copy of the final report shall be submitted to the Committee Chairperson. Upon receipt of Africa Bureau comments on the draft final report, the contractor will have one week to produce a final copy of the report and inventory. (the inventory shall be presented in a looseleaf notebook format, so as to allow for easy and timely updating.)

Twenty five copies of the report and twenty five copies of the inventory shall be submitted to the Chairperson no later than close of business on the last day of the week following receipt of Bureau comments.

ANNEX 2

Information Requirements by Functional Categories

INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	TP	Geog Off	FD	TR/MCI	MEI	CONF
<b>I. POLICY &amp; PROGRAM PLANNING</b>								
I. Bureau strategy process	Initiate	<ul style="list-style-type: none"> <li>- Bureau's policy objectives</li> <li>- Bureau's historical program performance</li> <li>- Congressional interests and concerns</li> </ul>	<ul style="list-style-type: none"> <li>- Agency policy/programming Objectives</li> <li>- Economic country data</li> <li>- Socio-econ info by sector</li> <li>- Other donor activity/levels</li> <li>- Legislative interests</li> <li>- Bureau's historical program performance</li> <li>- Trade databases</li> <li>- PVO program obj's/levels</li> <li>- PVO performance</li> <li>- PL 480 program objectives and levels</li> <li>- Past/projected regional agricultural production</li> <li>- Region/country food aid requirements</li> <li>- Country climatic/soil conditions/potential</li> <li>- PL 480 availability worldwide/Africa</li> <li>- Demographic trends</li> </ul>					
	Review	<ul style="list-style-type: none"> <li>- Agency/Bureau's policy program objectives</li> <li>- Other donor activities</li> <li>- Legislative interests</li> <li>- Bureau's historical program performance</li> <li>- PL 480 levels</li> <li>- Country food aid need/requests</li> </ul>	<ul style="list-style-type: none"> <li>- Agency/Bureau's policy objectives</li> <li>- Country/regional development needs</li> <li>- Other donor activities by region</li> <li>- Legislative interests</li> <li>- PVO program obj's</li> </ul>	<ul style="list-style-type: none"> <li>- PVO program obj's</li> <li>- PVO performance</li> </ul>	<ul style="list-style-type: none"> <li>- Regional specific development needs</li> <li>- Agency/Bureau policy objectives</li> <li>- Socio-econ data</li> <li>- Historical program performance</li> <li>- Other donor activity by sector</li> <li>- Legislative interests</li> <li>- PVO program obj's</li> </ul>			
	Approve	<ul style="list-style-type: none"> <li>- Same as above</li> <li>- Office clearances</li> </ul>						

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	GF	Geog Off	PD	TR/MOI	MST	COMT
Monitor			- CDSS strategy objs - Action plan objectives and benchmarks - ABS data - Socio-econ indicators - Food program performance - Met/unaet food needs - Meteorological data	- CDSS strategy objs - Action Plan objectives and benchmarks - ABS data	- Project/non-project goal, purpose, & outputs		- Sector strategy objs - ABS data	
	Evaluate		- Achievement of strategy objectives Progress/Accomplishments thru impact evaluations; measuring benchmarks; and case studies/stories				- Sector specific impact studies - Sector conference discussions/reports	
	Report		- Strategy document - Congressional Pres				- Sector progress reports for Congress and internal Bureau evaluation - Sector Conf. Reports	
2. Country Strategies (CDSSs)	Initiate	- Bureau program/policy objectives	- Program/Policy objs for guidance					
	Review	- Issues identified by reviewing committee - CDSS - HG pol/econ performance	- CDSS - Agency/Bureau strategy - Sector strategies - HG pol/econ performance - PVO presence/experience - Food aid requirements	- CDSS - Agency/Bureau strategy - HG pol/econ performance - PVO presence/experience - Food aid requirements	- CDSS - Agency/Bureau strategy - PVO performance	- CDSS - Agency/Bureau strategy	- CDSS - Agency/Bureau strategy - Sector strategies - PVO strengths by sector	
	Approve	- Same as above						
	Monitor		- Country Action Plan - Country ABS - PIRS - Program/project evaluations - PVO role/performance - Role of food aid	- Country Action Plan - Country ABS - PIRS - Program/project evaluations - PVO role/performance - Role of food aid	- PIRS(proj goal/purpose) - Program/project evaluations - PVO performance	- Country Action Plan - Country ABS - PIRS - Program/project evaluations		
	Evaluate		- Achievement of action plan objs					
	Report							

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	EF	Geog Off	FC	TR MCI	MET	CCMT
3. Country Action Plans	Initiate	- AA/DAA program/policy expectations	- Bureau strategy obj & AA/DAA program/policy expectations for guidance					
	Review		- Bureau/Country strategy- Same as DP - PIRs - Country AES - Country program performance - Current pol/econ performance - Pipeline/Mortgage - Role of PVO vis Program		- PIRS - ABS/CP - Prog/proj evals - New start schedule - PVO performance - Mission staff/workload - Program implementation performance - Pipeline analysis	- Sector strategies - PVO sector specific experience	- ABS	
	Approve	- Review committee issues and recommendations - Current econ/pol performance - Summary country strategy						
	Monitor		- Achievement of objectives and benchmarks - PIRS - PVO performance - Integration of resources (DFA,ESF, PL 482)	- PIRS	- PIRS - PVO performance	- PIRS - PVO sector specific performance		
	Evaluate		- Selected country socio-econ indicators					
	Report	- Qtrly summary report for dialogue with Congress	- Summary of Action Plan benchmark progress for Congressional Pres					

INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Geog Off	FD	TR/MDI	MGT	CONT
4. Sector strategies (including Marketing and investment and PVO strategies)	Initiate	- Agenda for the End Hunger Initiative Comm	- PVO performance/capacities - FVC interests/presence - PVO funding levels - FVA/FVC program agenda/policies/levels			- Agency sector policy objectives - Other donor activities - Historical budget/program trends - Assessment of sector program constraints - Bureau sector objectives - Sector relevant statistics - PVO experience - Past sector program performance - Legislative interests		
	Review		- Agency sector objective- - Legislative interests and concerns - Sector performance - Historical and projected budget levels - Bureau strategy - PVO program objs/role	- Country regional/sector development needs - Projected funding availability		For MDI: - Country investment /business climate/codes/incentives - Country econ/business overview - State role in industry - Rules of competition - Price controls, tax laws/procedures, licensing, - Country manufacturing & trade statistics - foreign investment climate/incentives - Capital sources - Labor laws		
	Approve	- Sector strategy - Review committee issues and recommendations - Sector performance to-date				- PVO comments/suggestions - MDI: all of the above for sector strategy reviews		

INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Geog Off	FD	TR/MDI	MST	CONT
Monitor			- Socio-economic indicators/benchmarks			- Socio-economic indicators/benchmarks		
Evaluate			- Sector specific impact studies			- Sector specific impact studies		
Report	- Sector progress for Congressional disc. (briefing books)		- In CP: progress and achievement of sector objectives			- FVO effectiveness		

INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS					
		AA	DP	Geog Off	FD	TR/MDI	MGT

II. PROGRAM BUDGETING

1. Bureau/Country allocations: (a) AAFLs; (b) OMB submission; (c) OYP; (d) Congressional presentation

Initiate	<ul style="list-style-type: none"> <li>- Program budget strategy</li> </ul>	<ul style="list-style-type: none"> <li>- Mortgage/Pipeline stat</li> <li>- Country economic performance</li> <li>- Country strategies</li> <li>- Population figures</li> <li>- Historical aid levels</li> <li>- Country program performance</li> <li>- PL 480 levels</li> <li>- Program budget strategy</li> <li>- Country ABSs</li> <li>- Budget level</li> </ul>			<ul style="list-style-type: none"> <li>- Obligation expenditure reports</li> <li>- AAFL level/budget strat</li> <li>- Reg/MDI Pipeline/Mortg</li> <li>- Reg/MDI Program Performance</li> <li>- Sector/Private sector Performance</li> </ul>		
Review	<ul style="list-style-type: none"> <li>- Budget level</li> <li>- Country economic performance</li> <li>- Country program performance</li> <li>- PL 480 Levels</li> </ul>		<ul style="list-style-type: none"> <li>- Same as DP above</li> </ul>	<ul style="list-style-type: none"> <li>- Program budget strat</li> <li>- Program performance</li> <li>- Country ABSs</li> <li>- Pipeline/Mortgage</li> <li>- Proj design/auth schedule/status</li> </ul>	<ul style="list-style-type: none"> <li>- Program budget strategy- Planned personnel levels by country</li> <li>- Historical aid levels</li> <li>- Program performance</li> <li>- Country ABSs/CDSSs</li> <li>- Pipeline/mortgage stat</li> <li>- Sector assessments</li> <li>- Other donor country data (levels, performance and evaluations/reports)</li> </ul>	<ul style="list-style-type: none"> <li>- Country ABSs</li> </ul>	<ul style="list-style-type: none"> <li>- Planned OE levels by country</li> <li>- Country ABSs</li> </ul>
Approve	<ul style="list-style-type: none"> <li>- Same as above</li> </ul>						
Monitor		<ul style="list-style-type: none"> <li>- Comebacks from PFC/OMB</li> </ul>	<ul style="list-style-type: none"> <li>- Budget revisions</li> </ul>				
Report		<ul style="list-style-type: none"> <li>- For Congressional Presentation: (a) Budget info as above (b) Field success stories (c) ODA data; (d) Program directions; (e) Program performance; (f) country narratives; (g) P1ng Proj Summary Tables; (h) planned trng levels</li> </ul>	<ul style="list-style-type: none"> <li>- For Congressional Presentation: Country narratives Budget levels P1ng Proj Sum Tables Country strategies Country Action Plans</li> </ul>		<ul style="list-style-type: none"> <li>- For Congressional Presentation: Sector program directions Reg/Priv sector program progress/accomplishments Budget levels Planned proj budget requirements Proj planned trng</li> </ul>	<ul style="list-style-type: none"> <li>- Planned personnel levels by country</li> </ul>	

2. OYB Implementation

Initiate	<ul style="list-style-type: none"> <li>- Pipeline/Mortgage stat</li> <li>- Budget allowance stat</li> <li>- Oblig plan by country and project</li> <li>- Deob/Reob status</li> <li>- CH/TN status</li> </ul>	<ul style="list-style-type: none"> <li>- Budget allowance status</li> <li>- Country/project budget levels</li> <li>- Planned obligs by country &amp; project</li> <li>- CH/TN status</li> </ul>	<ul style="list-style-type: none"> <li>- Reg/MDI project levels</li> <li>- Planned obligs by projs</li> <li>- CN/TN status</li> <li>- Date/amount of obligs</li> <li>- Deob/reob status</li> <li>- Expenditures by projs</li> </ul>
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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Geog Off	FD	IS/PEI	HEI	EDWT
			<ul style="list-style-type: none"> <li>- Bureau, country, and project budget levels</li> <li>- Project PACDs</li> <li>- Date/amount of obligs</li> </ul>	<ul style="list-style-type: none"> <li>- Deob/Reob status</li> <li>- Date/amount of obligs</li> </ul>				
	Reviz+Monitor	<ul style="list-style-type: none"> <li>- Status of obligations</li> </ul>	<ul style="list-style-type: none"> <li>- Status of obligations</li> <li>- CN/TH status</li> <li>- Deob/Reob status</li> <li>- Oblig by target levels</li> </ul>	<ul style="list-style-type: none"> <li>- Plan/Status of obligs</li> <li>- Pipeline/Mortgage stat</li> <li>- CN/TH status</li> <li>- Deob/Reob status</li> <li>- Budget Allowance Status</li> </ul>	<ul style="list-style-type: none"> <li>- Plan/Status of obligs</li> <li>- CN/TH status</li> <li>- Deob/Reob/status</li> <li>- Project PACDs</li> </ul>	<ul style="list-style-type: none"> <li>- Status of obligations</li> <li>- Status of CN/THs</li> <li>- Status of Deob/reobs</li> <li>- Attributions by sector</li> <li>- Expenditures by projs</li> <li>- Contract status</li> <li>- Project evaluations</li> <li>- MDI proj expends (SARS)</li> </ul>		
	Report		<ul style="list-style-type: none"> <li>- To Congress: Reductions in funding for previous FY</li> <li>- To PPC: Status of obligs</li> </ul>	<ul style="list-style-type: none"> <li>- Reductions in funding from previous FY</li> </ul>		<ul style="list-style-type: none"> <li>- Reductions in funding from previous FY</li> <li>- Expenditures by projs</li> <li>- Status of obligs</li> </ul>		
3. Local currency	Monitor		<ul style="list-style-type: none"> <li>- LC generations/ expenditures by country</li> <li>- Type of LC expenditures by source/type</li> </ul>		<ul style="list-style-type: none"> <li>- LC generations/ expenditures by country</li> <li>- Type of LC expenditures by source/type</li> </ul>	<ul style="list-style-type: none"> <li>- LC expenditures by type/sector</li> </ul>	<ul style="list-style-type: none"> <li>- LC trust funds for OE support</li> </ul>	<ul style="list-style-type: none"> <li>- LC trust funds for OE support</li> </ul>

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CATEGORY/PROCESS	ACTION	AA	DP	DESK	FD	TR	RDI
Project Design, Implementation and Evaluation							
1. Annual Design Scheduling	Initiate				<ul style="list-style-type: none"> <li>Results of REDSD scheduling workshop.</li> <li>Mission design plans.</li> </ul>		<ul style="list-style-type: none"> <li>Information on alternative private sector initiatives/projects for development (e.g. debt, equity swaps, guarant associations, country privatization strategies).</li> </ul>
	Revise				<ul style="list-style-type: none"> <li>Updates from field.</li> </ul>		
	Monitor		<ul style="list-style-type: none"> <li>Document submission/review schedule.</li> </ul>	<ul style="list-style-type: none"> <li>Document submission/review schedule.</li> </ul>	<ul style="list-style-type: none"> <li>Document submission/review schedule.</li> </ul>	<ul style="list-style-type: none"> <li>Document submission/review schedule.</li> </ul>	<ul style="list-style-type: none"> <li>Document submission/review schedule.</li> </ul>
2. PID/PAIP Approval	Initiate				<ul style="list-style-type: none"> <li>Confirmation of document submission date.</li> </ul>		
	Review		<ul style="list-style-type: none"> <li>Country strategy.</li> <li>Country DYB fit.</li> <li>Country economic data.</li> <li>Country Action Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Country strategy.</li> <li>Mission staffing and workload.</li> </ul>	<ul style="list-style-type: none"> <li>Country strategy.</li> <li>Relevant A.I.D. policies.</li> <li>A.I.D. experience with similar projects.</li> <li>Mission staffing and workload.</li> <li>Pipeline and other program implementation data.</li> <li>Country economic data.</li> </ul>	<ul style="list-style-type: none"> <li>Sector strategy.</li> <li>Technical feasibility data.</li> <li>A.I.D. experience with similar projects.</li> <li>Other donor activity in same field.</li> <li>Relevant A.I.D. and Bureau policies.</li> </ul>	<ul style="list-style-type: none"> <li>Country private sector assessment/strategy.</li> <li>Agency/Bureau strategies and policies for private sector.</li> <li>Country ec &amp; business data.</li> <li>A.I.D. experience with similar or alternative projects.</li> </ul>
	Approve	<ul style="list-style-type: none"> <li>Inputs and recommendations from ECFR and Project Committee.</li> </ul>					<ul style="list-style-type: none"> <li>Environmental data and policies (for IIE approval).</li> </ul>
3. Assembly of PP/PAAD Design Team	Initiate				<ul style="list-style-type: none"> <li>Team requirements and scope of work.</li> <li>Names of qualified individuals.</li> <li>List of relevant IOC's and buy-in arrangements.</li> </ul>	<ul style="list-style-type: none"> <li>Team requirements and scope of work.</li> <li>Names of qualified individuals.</li> <li>List of relevant IOC's and buy-in arrangements.</li> </ul>	<ul style="list-style-type: none"> <li>Team requirements and scope of work.</li> <li>Names of qualified individuals.</li> <li>List of relevant IOC's and buy-in arrangements.</li> </ul>
	Monitor				<ul style="list-style-type: none"> <li>Status of contracting actions and consultant/TDY travel schedules.</li> </ul>	<ul style="list-style-type: none"> <li>Status of contracting actions and consultant/TDY travel schedules.</li> </ul>	<ul style="list-style-type: none"> <li>Status of contracting actions and consultant/TDY travel schedules.</li> </ul>
4. PP/PAAD Approval and Authorization	Initiate				<ul style="list-style-type: none"> <li>Confirmation of document submission or field review/authorization dates.</li> </ul>		
	Review (in AID/W)		<ul style="list-style-type: none"> <li>PID guidance.</li> <li>DYB.</li> <li>Mortgage data.</li> </ul>	<ul style="list-style-type: none"> <li>PID guidance.</li> <li>Mission staffing and workload.</li> <li>DYB.</li> </ul>	<ul style="list-style-type: none"> <li>PID guidance.</li> <li>Mission staffing and workload.</li> <li>DYB.</li> <li>Legal inputs (from GD).</li> <li>Relevant A.I.D. policies.</li> </ul>	<ul style="list-style-type: none"> <li>PID guidance.</li> <li>Information on technologies, what does and does not work.</li> </ul>	<ul style="list-style-type: none"> <li>PID guidance.</li> <li>Technical information on what does or does not work in private sector development.</li> </ul>

CATEGORY/PROCESS	ACTION	AA	BP	DESK	FD	TR	MDI
Project Design, Implementation and Evaluation	Approve (Authorize)	Inputs and recommendation from ECFR and Project Committee. Status of CN. Justification for waivers.	Status of CN.	Status of CN.	Status of CN.		
	Monitor		Status of budget allowance. Notification of initial obligation.	Status of budget allowance. Notification of initial obligation.	Status of budget allowance. Notification of initial obligation. Receipt of documents from field (FP/FAAD, agreement).		
5. Implementation Backstopping	Initiate				Background information/ justification for action (waiver, FACD extension, delivery order, etc.). A.I.D. procurement policies. List of relevant IGC's and buy-in arrangements for contracting actions.	Background information/ justification for action (buy-in, etc.) A.I.D. procurement policies. List of relevant IGC's and buy-in arrangements for contracting actions.	Information on relevant IGC's and buy-in arrangements for contracting actions.
	Monitor	Pipeline analysis. Overall country/Bureau implementation status and major problems/issues. Gray Amendment compliance status.	Notification of major implementation actions (CP's net, procurement solicitations and awards, etc.). Pipeline analysis. General project/program implementation status.	Notification of major implementation actions (CP's net, procurement solicitations and awards, etc.). Pipeline analysis. General project/program implementation status.	Notification of major implementation actions (CP's net, procurement solicitations and awards, etc.). Pipeline analysis. General project/program implementation status. Gray Amendment - qualifying procurements.	Notification of major implementation actions (CP's net, procurement solicitations and awards, etc.). Pipeline analysis. General project/program implementation status.	Implementation status (in FIR's), especially results stimulated from projects (e.g., products sold, new jobs forced, growth of market towns).
	Evaluate		Findings of project/program evaluations and audits.	Findings of project/program evaluations and audits.	Findings of project/program evaluations and audits.	Findings of project/program evaluations and audits.	
5. Development of Guidance for Project/NPA Design and Implementation	Initiate				Previous guidance. Related policies. Laws/GC opinions. Field inputs.		
	Review		Previous guidance. Related policies. Laws/GC opinions. Field inputs.	Previous guidance. Related policies. Laws/GC opinions. Field inputs.		Previous guidance. Related policies. Laws/GC opinions. Field inputs.	
	Approve	Staff recommendation.					
	Monitor/Revise				Adherence of project/program design documents to guidance. Field compliance with implementation guidance and effectiveness in using delegations of authority.		

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Genl Off	FQ	IF/NDI	M&E	CCNC
<b>IV. Monitoring and Evaluation</b>								
1. Target/Benchmark Performance (based on the Strategic Objectives in the Bureau's Action Plan)	Initiate		- Measurement of progress in achieving objectives in the Bureau's Action Plan				- Progress of sector related objectives in the Bureau's Action Plan	
	Review/Monitor	- Findings of progress in achieving targets and benchmarks	- Progress and impact of program targets and benchmarks over time		- Project related progress and impact of targets and benchmarks		- Sector related progress and impact of targets and benchmarks over time	
	Analyze		- Quality/effectiveness of performance measurement				- Quality/effectiveness of sector related performance measurement	
	Report	- Findings & conclusions tied to agt. decisions	- Findings on performance		- Findings from project related M & E systems		- Findings of sector related targets and benchmark measurement	
2. Cross-cutting Issues (i.e., WID, TRNG, Policy Reform, etc.)	Initiate		- Measured progress/impact of/on special areas of interest that cut across sectors, initiatives, etc.				- Same as DP where relevant	
	Review/Monitor		- Quality/effectiveness/timeliness of methodology				- Same as DP where relevant	
	Analyze		- Findings vis-a-vis the issues				- Same as DP where relevant	
	Report		- Findings/Conclusions/Recommendations				- Same as DP where relevant	
3. Development Modalities	Initiate/Co-ordinate		- Evaluate activities					
	Review		- Proposals containing new concepts	- Same as DP	- Same as DP		- Same as DP	
(a) integrated food/ BFA/ESF/Local Currency; (b) PVO/Mabrelia projects; (c) NPA/Projects; (d) donor coordination; etc.	Approve		- Thru PIRs, concept progress					

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Geog Off	PD	TR/MDI	MSF	CGMT
	Monitor		- Progress/effectiveness of various modalities		- Same as DP			
	Analyze		- Potential for institutionalization					
	Report		- Findings/Conclusions/Recommendations					
<hr/>								
4. Program Management Approaches								
(a) Streamlined procurement programming documentation requirements;	Initiate/Co-ordinate		- Evaluative activities to assess effectiveness/ impact of these approaches		- Same as DP			
(c) multi-year budgeting; (d) performance based budgeting; etc.	Review				- Proposed evaluative activities	- Same as DP		
	Approve	- Changes proposed due to evaluative findings						
	Monitor		- Progress of evaluative activities		- Same as DP			
	Analyze		- Impact/effectiveness of new approaches		- Same as DP			
	Report		- Findings/Conclusions/Recommendations		- Same as DP			

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Geog Off	PD	TR	MGT	CONT
V. MANAGEMENT & ADMINISTRATION								
1. Annual OE Budget	Initiate						- OE funding availability- - Country staff/program needs - AES - Unit cost trends	- OE funding availability - Country staff/program needs - AES - Unit cost trends
	Review	- OE fund Availability	- OE Fund Availability	- OE level - Country staff/program needs				
	Approve	- OE fund availability		- ABS				
	Monitor							- Annual OE level - Monthly rate of obligation by Missions - Allowances/status
	Evaluate							
	Report							
	2. Personnel assignments	Initiate						- Unit staffing needs by Bureau/Mission - Qualifications of nominee - Personnel availabilities and timing - Nominee performance - Nominee previous positions and responsibilities
Review			Same	Same	Same		- Qualifications of nominee - Personnel availabilities and timing - Nominee performance - Nominee previous positions and responsibilities	Same
Approve		- Clearance of relevant offices						- Clearance of relevant offices/Mission
Monitor								- Personnel assignments

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	BP	Genl Off	FD	TR	MST	CONT
	Report						worldwide by length of tour monthly	
3. Bureau Travel Budget	Initiate							
	Review	- Budget level from FM - Office requests					- Budget level from FM	- Office budget requests - Budget level from FM
	Approve	Same						
	Monitor							
	Report							- Obligation rate
4. Bureau Info System Equipment, Trng, Data Mgt. & Acquisition	Initiate		- Same as CONT	- Bureau equipment needs/inventory - Staff skill level - Staff training needs - Inventory of existing data sets by office - Identification of data needs - Frequency of data update	- Estimate of equipment needs - Assessment of staff skill level/trng needs			
	Review	- Summary of office requests - Rationale for proposed acquisition - Funding availability					- Office requests - Type/number of staff per unit - Cost of equipment - Funding availability - Equipment availability	- Unit cost of equipment - Funding availability
	Monitor		- Same as TR	- Same as TR	- Same as TR	- Equipment use/needs - Staff skill level and trng. needs - Frequency of update of data sets - Quality of data sets	- Arrival & distribution of equipment - Update of inventory of data sets - Frequency of update of data sets - Staff skill level and trng. needs - Equipment use/needs	- Same as TR

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DF	Geop Off	FD	TS	WEST	CCNT
	Evaluate							<ul style="list-style-type: none"> <li>- Condition of equip</li> <li>- Bureau's ability to access info needs</li> <li>- Availability of info needed/required</li> </ul>
	Report							
5. FAR/EER Process	Initiate	- Complete EER/PARs	- Complete EER/PARs	- Complete EER/PARs	- Complete EER/PARs	- Complete EER/PARs	- Complete EER/PARs	<ul style="list-style-type: none"> <li>- Personnel by GS/FS by who, when &amp; where</li> <li>- Panel reviews</li> <li>- Status during reviews</li> </ul>
	Review							<ul style="list-style-type: none"> <li>- Each EER/PAR location</li> <li>- Panel assignments</li> </ul>
	Monitor							<ul style="list-style-type: none"> <li>- Status/location of each EER/PAR</li> </ul>
6. Mission & office functional assessments	Initiate							<ul style="list-style-type: none"> <li>- Projected functional needs/directions</li> <li>- Staffing pattern by office/Mission</li> <li>- Criteria for assessments</li> <li>- Designated Mission/office/position function</li> <li>- Availability of individuals for Mission Assess</li> <li>- Schedule of assessments by country</li> </ul>
	Review	- Outcome of assessments						<ul style="list-style-type: none"> <li>- Same as above</li> <li>- Outcome of assessments</li> </ul>
	Monitor							<ul style="list-style-type: none"> <li>- Implementation of recommendations</li> <li>- Schedule of Mission assessments</li> </ul>
	Evaluate							<ul style="list-style-type: none"> <li>- Quality of assessments/functional analyses</li> </ul>

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Secy Off	FD	TR	ST	CON

Report

7. Audit Reports

- Initiate
- Review
- Approve
- Monitor

- Copy of each report
- Outstanding recommendations
- Response to recommendations

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	DP	Geog Off	PD	TR/MCI	MGT	CCMT

VI. External Relations

1. Congressional Relation  
Legislative Process

Initiate

For Congressional Use As:

BUDGET

- Trends by country, sector, attribution, special interest, DFA, food aid and disaster assistance funding
- Per capita assistance by year and country (3 year spread)
- Status of current year funding in special interest areas
- Pipeline/Mortgage analysis by region/country/project (including reason for largest pipelines)
- Other donor contributions to Sub-Saharan African countries

PROGRAM-RELATED DATA

- New starts by year, country, sector, LOP and OYB (3 year spread)
- Summary of new and continuing projects (3 year spread)
- Country program summaries (3 year spread)
- DFA NPA by country, program, LOP and OYB with TA amounts specified (3 year spread)
- Local currency generations and expenditures by country, source, and use
- Debt-related data and initiatives
- Data and graphs on sectoral concerns, such as cereals production, population growth rate, infant mortality, etc.
- Evaluation: Status, lessons learned, and success stories

STRATEGIC CONCERNS

- Progress achieved, current status and future plans for implementing:
  - DFA
  - Policy reform efforts
  - Sector strategies (IRM, CS, Private Sector, etc)
  - End Hunger Initiative
  - Integration of Food Aid with Development Program

MANAGEMENT CONCERNS

- Status of personnel by mission
- Status of GAO/IG audits and summary of AID response

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2. PVO Coordination

Initiate

- Agency/Bureau policy objectives
- Legislative mandate
- Country PVO program data
- Other donor PVO activities
- PVO support guidelines
- PVO program levels
- Programs by country, type and objectives
- PVO performance

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INFORMATION REQUIREMENTS BY FUNCTIONAL CATEGORIES

Functional Categories and Activities	Functions of these activities	OFFICE INFORMATION REQUIREMENTS						
		AA	AF	Gene Off	FR	TRAVEL	REG	CONF
	Review	- Legislative mandates - Agency/Bureau policy objectives - FVO experience	- Other A.I.D. region PVO programs	- Country FVO data - Agency/Bureau FVO policy objectives - Legislative mandate	- FVO performance	- FVO experience by sector - FVO performance - Legislative mandates - FVO role in private sector development		
	Approve	- Same as above						
	Monitor		- FVO community interests- - Legislation - Effectiveness of coordination - Effectiveness of field programs - FVO new starts	- Country FVO performance	- FVO performance by country/project - FVO new starts - FVO project management	- Sector specific FVO performance including in the private sector		
	Evaluate		- PVO role in development - PVO program management - PVO supported GFA, Food Aid, Local Currency programs - Impact on beneficiaries		- PVO performance by country/project - Impact on beneficiaries	- FVO sector specific effectiveness/impact		
	Report							
<hr/>								
3. Coordination with international agencies and other donors	Initiate		- DAC Data - Other donor policy agendas	- DAC data - Other donor policy agendas		- Sector specific other donor programs/levels/ and objectives		
	Review		- A.I.D. country programs - Other country programs and levels - Other country development strategies					
	Approve							
	Monitor		- Same as "review" - Other donor policy agendas	- Other donor policy agendas		- A.I.D./other donor regional initiatives (effectiveness/effort)		
	Evaluate							
	Report							

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ANNEX 3

Key List of Documents and Reports by Producer

ANNEX 3

Key List of Documents and Reports by Producer

<u>Name</u>	<u>Source</u>
Project Control Register	ANE
Briefing Book	DP/PAB
Annual Budget Submission FYxx	DP/PAB
Congressional Presentation FYxx	DP/PAB
PL480 Title 1/III Country Justifications	DP/PAB
Approved Assistance Planning Levels (AAPL)	DP/PAB
FYxx: Deobligation/Reobligation Requirements	DP/PAB
Obligation Schedule Cable	DP/PAB
Request for Budget Allowance	DP/PAB
Executive Contact List for PVOs	FVA/PVC/IPS
Introducing MDI	MDI
Manual for Action in the Private Sector	MDI
Private Sector Strategies	MDI
Regional Trade & Economic Cooperation in S.Af.	MDI
Country Invest. Climate Assess. & Priv. Sect. Survey	MDI
OIS Equipment Office Location List	MGT
Action Plan	Mission
Annual Budget Submission (ABS)	Mission
Concept Paper	Mission
Country Development Strategy Statement	Mission
FYxx Private Sector Rehabilitation PAAD	Mission
Auction Program Support - PAAD Amendment	Mission
Mission Reporting OE Obligations cable	Mission
PFAR Cable Report	Mission
Program Assistance Approval Document (PAAD)	Mission
Project Identification Document Facesheet (PID)	Mission
Project Implementation Report	Mission
Project Paper	Mission
Small Country Strategy Statement	Mission
A.I.D. Automation Review List	M/SER/IRM
Automated Inventory Management System	M/SER/IRM
How to update CONDOR Files	M/SER/IRM
Main Frame Systems	M/SER/IRM
Action Memorandum for the AA/AFR	PD
PIR Summaries	PD/EAP
Document Tracking Report	PD/IPS

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Summary of [regional] PIRs	PD/SAP
PIR Reporting Cable	PD/SAP
Project Authorization	PD/SAP
PAAD (PP) Reporting Cable	PD/SAP
PAIP (PID) Reporting Cable	PD/SAP
Program Assistance Approval Document (PAAD)	PD/SAP
Issues Paper	PD/SWAP
A.I.D. Res and Dev Abstracts	PPC/CDIE
A.I.D. Dev. Info. Center Manual	PPC/CDIE
COM Indexes: A.I.D. Project Reports	PPC/CDIE
COM Indexes: A.I.D. Technical Reports	PPC/CDIE
Development Experience Abstracts	PPC/CDIE
Directory of Dev. Info. Network	PPC/CDIE
Evaluation Occasional Papers	PPC/CDIE
Evaluation Report Acquisitions List	PPC/CDIE
FY87 PPC/CDIE Information Service Stats	PPC/CDIE
Management Assessment: PPC/CDIE	PPC/CDIE
Minis in USAID -- Now and Future	PPC/CDIE
PPC/CDIE Briefing Portfolio	PPC/CDIE
Program Evaluation Discussion Paper	PPC/CDIE
Program Evaluation Report	PPC/CDIE
Project Impact Evaluation Reports	PPC/CDIE
Research and Reference Services	PPC/CDIE
Research and Reference Service Monthly Report	PPC/CDIE
Special Bibliographies	PPC/CDIE
Technical Report Acquisitions List	PPC/CDIE
Doc. and Info. Handling Facility monthly report	PPC/CDIE
A.I.D. Thesaurus	PPC/CDIE
Evaluation Special Study	PPC/CDIE
Program Design and Evaluation Methodology Report	PPC/CDIE
FYxx Approved Assistance Planning Levels cable	PPC/PB
Policy Papers	PPC/PDPR
Policy Determinations	PPC/PDPR
Briefing Paper	SWA
Country Fact Sheet	SWA
ARD Operating Procedures	TR/ANR
FEWS Country Report	TR/ANR
Indicators for Tracking AFR Bureau's Progress	TR/ANR
Plan for supporting Ag Research...in Africa	TR/ANR
Ag. & Rural Dev. Functional Review FY80-89	TR/ANR
Projects which contrib. to the Ag. Prod Strateg	TR/ANR
HPN Happenings	TR/HPN