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Quantitative Data Collection and Analysis in
USAID/Nepal and USAID/Egypt

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Executive Summary

Information about current involvement with quantitative data use in USAID missions is necessary for developing an information policy for the Agency. A set of USAID missions which exemplify the range of mission capacity to use quantitative data effectively for applied purposes has been selected. Mission staff will be interviewed about 1) current projects which involve data collection and analysis; 2) the mission's general situation in regard to data quality and access; 3) problems they have encountered with data use; and 4) their opinions concerning an information policy for USAID.

The first round of interviews were conducted in USAID/Nepal and USAID/Egypt. This report discusses a number of projects which involve data collection and analysis and draws from them lessons to learned concerning data related activities in USAID operations. The two missions represent a useful contrast between a moderately small mission (Nepal) and the largest mission (Egypt). Major problems USAID/Nepal confronts include: 1) the very limited availability of timely and accurate basic data; 2) a host country with a very limited capacity to collect and analyze data; and 3) no automated data processing equipment in the mission. USAID/Egypt generally confronts problems of 1) data base refinement; 2) broadening data collection to fill existing information gaps; 3) improving the quality and timeliness of specific data;

4) creating interest in improved data use within host country ministries; and 5) a lack of coordination of data use within offices and within the mission. The different problems these two missions confront can be contrasted as developing fundamentals (Nepal) versus refining basic capacities (Egypt). However, limited work time and limited quantitative skills among mission staff impede more effective use of data in both missions.

It is recommended that AID/Washington and PPC improve support for data use. Mission staff suggested the following:

- 1) develop a set of standard analyses missions could replicate to improve their use of data for program and strategy formulation;
- 2) provide assistance for better coordination of data use within the missions;
- 3) clarify whether process and/or impact data should be collected for evaluations;
- 4) develop guidelines for an information strategy statement in the CDSS.

Other recommendations include clarifying the estimated increase in data use compliance with new policies will require; develop standards for contractor performance of data related activities; supplement mission staff for better data use; and develop small data banks within missions.

I. USAID/Nepal

Overview

In comparison to other missions in Asia and Latin America, AID/Nepal is smaller than many. The mission's past annual budget was approximately \$20 million. The mission has a direct hire staff of twenty-five. In terms of the in-house capacity to use quantitative data, several of the mission's staff have the training or experience to use data effectively for applied purposes. At present, however, little if any such work is done. The major constraints include the following: 1) the mission is dependent on the Nepalese government for much data which are generally considered to be of low quality (i.e., low validity and reliability); 2) the workload of mission staff does not allow for direct involvement in data related activities; 3) USAID/Nepal has acquired no automated data processing equipment for use by mission staff; consequently, there is no inhouse facility for data storage, retrieval or secondary use; and 4) little if any technical assistance is available to mission staff to assist them with applied analyses. As for the host government, the Nepalese ministries have a very limited capacity to collect accurate and timely data, to perform thorough analyses, and to manage data sets for future use. Compounding this situation, the adverse physical environment of Nepal and the lack of basic communication and transportation systems throughout much of the country makes even simple data collection a major undertaking.

Both the quality and quantity of available data adversely affects the planning and evaluation capacities of the Nepalese Government and AID/Nepal. For example, due to a recent drought, significant grain shortages are anticipated. As of mid-September, the severity of the problem was still uncertain. Tonnage estimates of shortages ranged from tens of thousands to hundreds of thousands. Needless to say, plans for a shortfall of 20,000 to 30,000 tons will not be adequate if the actual shortages reach 100,000 or 200,000 tons. The importance of better estimates is widely recognized by the AID mission, the Ministry of Agriculture, and even by the King. Moreover, FAO and World Bank as well as the international development agencies of other countries are active in Nepal. However, a good estimate of the anticipated shortage does not exist because there is no system for routinely monitoring agricultural production nationwide especially taking into account the adverse effects of unfavorable weather conditions. The limited capacity to produce key indicators is a problem for other Nepalese ministries as well. Consequently, the capacity of the Government of Nepal and AID/Nepal to make projections and plan accordingly is severely handicapped.

There is, however, good reason to believe that improvements will occur as a direct result of AID/Nepal's current program. Equally important is the recognition by the Nepalese government of the importance of improving their data bases and analytic

capabilities. AID/Nepal's staff is very much aware of the inadequacies of existing data bases. Projects in each of the major program areas - Agriculture and Resource Conservation, Rural Area Development, and Health and Family Planning - will 1) generate data which will help fill present information gaps and 2) expand the institutional capacity of the Nepalese government to produce more accurate and timely data. It is reasonable to assume that this improvement in available data^{will} facilitate better planning by the Nepalese ministries and AID/Nepal.

1.1 Agriculture and Resource Conservation

The major project currently funded through this office is Resource Conservation and Utilization for which \$27.5 million has been obligated. Its primary goal is to identify, develop and implement strategies for reversing major environmental degradation. This problem is most severe in the hill and mountainous regions of Nepal because the ecological balance in these areas is very delicate. In recent years, as population has increased, the demand for fuel and fodder has also increased, producing serious deforestation. In the hill and mountainous regions, the topsoil is quite thin over the underlying mica sheet. When trees and shrubs are cut down, the ^{soil} cannot absorb as much water. It saturates to the point where water penetrates between the layers

of mica, causing it to lift and slide downhill. Much valuable agricultural land has been permanently lost as a result and in some instances, entire villages have been destroyed by the landslides.

The Resource Conservation and Utilization Project (RCU) is now concentrating its efforts on two watersheds in the north central region of Nepal. Technical assistance is being obtained from the Southeast Consortium for International Development. The Consortium is providing a staff of ten to twelve professionals to work on various aspects of the project. Given the scope of the problem, the project will involve participation by eleven different line ministries. The project is also designed to be responsive to local conditions and problems and to accommodate the needs of area residents.

The project has considerable need for a strong data base both for research purposes as well as for project monitoring and evaluation. Baseline data has been collected to develop an inventory of problems within the project zone and measure their severity. The data should have immediate utility in identifying what stopgap measures could be taken to slow ecological problems in certain areas. In the longer term, such data will be necessary for evaluating project impact and provide a data base to be built upon in coming years. The project also proposes to establish a

college or institute for resource conservation training. Some of those trained at the institute would, I assume, be able to carry on the data collection necessary for planning future resource conservation efforts.

A second project which ultimately could provide data to the RCU is the Agricultural Resource Inventory Project. Five million dollars over five years has been obligated to train Nepalese to interpret remote sensing data. This includes satellite imagery, infra-red scanning and aerial photography. Equipment for interpreting the data will be purchased. Training will focus on how to use these data sources for a number of different purposes. Particularly important will be the development of a forestry resources inventory which will allow monitoring environmental changes. Remote sensing data will also be used to identify and monitor cropping areas throughout the country. One result could be a solution to the afore-mentioned problem - predicting crop shortages due to adverse climatic conditions during the year.

Other projects which contain a data related component include the Integrated Cereals Project. A current emphasis of this project is to improve Nepal's research stations. Part of that improvement will be better data collection and analysis. The Cropping Research Program has taken a major step toward developing agricultural technologies which will be acceptable to Nepalese

farmers. A common problem such projects encounter is that the technology developed to increase agricultural production is effective under highly controlled conditions. However, introduction of the technology is difficult because it entails substantial behavioral changes - e.g., the adoption of new farm management practices. To overcome this problem, scientists are working in the field with farmers who will actually use the technology as it is developed and proven effective. In this case, the project combines research and extension work to devise practical innovations to increase agricultural production which will be acceptable to farmers. Data collected on farm practices and yields play an important part in this process.

The office is also funding the development of the Institute for Agricultural and Animal Sciences. A major component of AID's contribution is the provision of technical assistance for faculty improvement. Funds will be used to train approximately fifty students a year in agricultural and animal sciences. In time, this should develop the capacity of the institute to collect and analyze data especially in the areas of agricultural economics and animal husbandry. The India Training Project is another educational effort which AID/Nepal supports. Approximately three to four hundred Nepalese are sent to study in India. Similarly, the Agricultural Development Council and PVO's working under AID

funding are providing training to Ministry of Agriculture staff to increase the ministry's planning capacity. They are currently concentrating on the ministry's need for adequate data systems for project monitoring and evaluation. As a result of improving the amount and quality of data available to the ministry, better resource allocation is anticipated. In general, the basic problem all of these projects address is that poorly trained staff in the ministries collect low quality data and produce inadequate analyses.

The Agriculture and Resource Conservation Office has funded the Seed Production and Storage Program. The project focuses primarily on the logistics and costs of building twenty mini-seed houses in remote areas where agricultural potential is high but transportation is difficult. The plan is to develop facilities for reproduction of improved seed crops locally where they will be used. An excellent example of how socio-economic data will assist such projects is a survey proposed by Paul Kaplan working for IADS. Kaplan constructed a simple questionnaire to collect data on the size of landholding, crop production, crop mix, current source of seed stock, farmer interest in producing seed for sale, available extension services and other questions pertaining to the location and management of seed houses. Kaplan

interviewed farmers in two panchayats near Pokhara. From the analysis of the data (using just simple percentages), he was able to offer guidance for decisions concerning the best construction sites for seed houses.

This very straightforward, uncomplicated survey demonstrates that even the simplest use of socio-economic data can assist projects which are primarily oriented toward technological inputs. It also indicates that the key factor in obtaining useful, timely data in Nepal is simplicity. The trade-off is, of course, precision, but greater precision entails both greater expense and time to collect the data. The question is just how much precision is necessary for the purpose at hand. Given the alternatives of no data or inaccurate data, a bare minimum of data - in terms of quantity and quality - is far preferable. As this example suggests, the rule of thumb should be: the simpler, the better and it should be applied to all aspects of the data component of projects - particularly the sample design, the amount and type of data collected and the analysis.

One final point that should be made is that three of these projects currently involve the use of microcomputers. The Resource Conservation and Utilization Project is using two Apple II plus micro's for budgetary and financial reporting. The Agricultural

Development Council has been using a Hewlett-Packard microcomputer for several years for statistical analysis of survey data and other tasks. The Institute for Agricultural and Animal Sciences has an Apple system which it has been using for project monitoring and word processing. A microcomputer has also been proposed for the Seed Production and Storage Program which could facilitate data collection and analysis.

1.2 Rural Area Development

AID/Nepal has obligated \$26.7 million for the Rapti Zone Project. This is an integrated rural development project which has been implemented in a hill region of southwest Nepal. The project will make direct inputs into agriculture, health, education, resource management and family planning systems. It will attempt to improve service delivery in these areas as a means of improving the quality of life, income and production throughout the Rapti Zone. Project beneficiaries will include both farm and non-farm households.

Given the five major components of the project, it is anticipated that there will be considerable use of quantitative, socioeconomic data. The goal of agricultural and farming systems inputs is to increase production of field crops and pulses, livestock and animal by-products. The project will expand fruit and nut orchards and bring an additional 1,250 hectares of land under

full irrigation. Altogether these improvements are expected to affect some 150,000 farmers in the zone. Increased household consumption will result from 1) establishing home gardens, 2) providing basic nutritional education and 3) improving home processing and storage of foodstuffs. Substantially expanded and improved extension services will support these efforts. Special attention will be given to farmer run organizations as a means of improving farm practices. Groups of small farmers will also be organized into loose cooperative-like units to facilitate their access to credit for farm improvements. In general, agricultural inputs will draw upon information provided by the Integrated Cereal Crops Project, Seed Production and Storage Project and the Hill Agriculture Production Project.

The other components of the Rapti Zone Project are:

- 1) Renewable Resource Management - reforestation, establishing nurseries, improving existing forest areas, soil and water conservation with the goal of providing fuel and fodder;
- 2) Employment and Skills Development - a major effort will be made to increase basic literacy. Skill training for agro-based and other indigenous light manufacturing will be directed to marginal or landless individuals. Funds will also be provided for improving primary and secondary schools. The Radio Education

Teacher Training Project will supplement this part of the project.

- 3) Appropriate Technology/ Alternative Energy - the project will encourage appropriate technology for local manufacturing and the local production of parts for biogas plants.
- 4) Rural Works - improvements of major roads will be undertaken to allow passage of five to seven ton trucks for approximately eight months of the year.
- 5) Institutional Development - the Rapti Zone Project emphasizes decentralization of development projects by incorporating participation by local residents in decision-making and by developing the capacity of district offices to serve the region. Ministry offices in the zone will be upgraded or constructed as will health centers in conjunction with the Integrated Rural Health/Family Planning Project.

It should be apparent to even those who are not well disposed toward data use that the information needs of this project are genuinely substantial. The project has made some progress in this direction. A baseline survey has been completed by the Agricultural Projects Services Center (a unit within the Ministry of Agriculture). The survey collected much agricultural data on crop production, livestock and horticulture which will be used to measure available food supply increases and land improvements

resulting from irrigation, protected forests, treatment of degraded agricultural land and the establishment of nurseries. Such data will be indispensable for showing the development impact of the project. Data was also collected for estimates of household production and consumption and on health status, education and family planning practices. This data was to measure the existing quality of life in the project area.

The decentralization - institutional development component has special information needs. It was necessary to strengthen the planning capacity at the district and local levels through systematic monitoring of all development activities in the Rapti Zone. AID is not operating alone in Rapti. ODA, World Bank and CIDA also have ongoing projects in the zone. A very useful monitoring system was devised by Andy Manzardo for the Ministry of Panchayat and Local Development which is in charge of the Integrated Rural Development Projects. Manzardo defined the task as follows:

"Measurable objectives must be explicitly stated to allow assessment of progress towards achievement relative to financial inputs. The measurable objectives must be clearly defined in the planning phases of the project cycle such that for each measurable objective, present status vis-a-vis specific targeted objectives can be determined relative to fis-

cal information." (1982)

The system developed by Manzardo performs precisely as he described it. Despite the initial / ^{impression} of heavy quantification, it is, in fact, an elegantly simple system consisting primarily of objective goals - e.g., establish fifty hectares of new nurseries every four months, extend full irrigation to one hundred farms each year, etc. On a trimester basis, information from the sub-district level is submitted to the district office on recent performance (e.g., how many hectares of land have been improved, trees planted, etc.). This is combined with financial data - funds allocated, funds available (divided into carry over, amount received and date received) and actual expenditures (salaries and allowances, capital expenditures and other). There are also reports on staffing levels and training activities. Annual reports compare actual performance to proposed goals in light of budget information. For example, if a project falls far short of its targetted objective, financial data might show that this is because funds were not allocated until the third trimester and that only fifty percent of the annual budget was actually spent. Knowing that could be a large step toward improving project implementation. The system has a number of other possible uses, not least of which is identifying projects which / ^{require}

mid-term revisions. The overall goal of the system is to simplify reporting by using existing staff and information and eliminating data which is not used. If the government accepts the entire system, it will be possible to reduce the number of annual reports filed by the IRDP staff from twenty-five to three per year while actually improving their knowledge about project progress.

Unfortunately, the baseline survey was not carried out with the same success as was the project monitoring system. It is likely that this will affect the proposed project evaluation plan unless remedial action is taken. For example, in reference to the third year and final evaluations, the project paper states:

"In addition to assessing the project in terms of meeting its basic purposes, specific measurable criteria relating to operational components of the project will be identified in advance of these evaluations." (1980:37)

Evaluations will involve "measurement of target performance and measurement of development impact." (ibid). As described in the Logframe of the project, to assess performance and development impact will require before and after type analyses.

According to the current project officer, the baseline survey

was initially planned to serve as a guide to project design by identifying major problems. However, the survey became something of a fishing expedition where too much attention was given to collecting a wide range of data rather than data for specific purposes. The study then became too comprehensive and the analysis too lengthy and complicated. There were also questions concerning the quality of data due to inadequate training of supervisors and interviewers. From my own reading of the description of the sampling methodology, it appears that there might be a basic design flaw which further undermines the validity of the data (in this case, the representativeness of the sample which questions the generalizability of the results). A cluster design was used but the final distribution of interviews within villages appears to have been arbitrarily made rather than made proportional to the population size of panchayats or village wards. If this is the case, the sample over-represents some places and under-represents others. To make matters worse, the final data tapes the APROSC made (in Calcutta on obsolete computer facilities) are, according to the Research Triangle, unreadable or uninterpretable. Moreover, the actual "cleaning process" that APROSC used to "correct" erroneous data remains something of a mystery to the AID project officer. At this point, of course, the project is well under way and attention has shifted to implementation.

problems. It would appear that even given the problems of data quality and possible sampling error, to use the baseline survey, a new data set will have to be constructed from the original questionnaires (which as a result of the project officer's wisdom or good fortune, are stored in the mission).

The mixed progress of the Rapti Zone Project in regard to meeting its information needs contains some valuable lessons. On the positive side, the monitoring system indicates that much can be accomplished using available data simply by organizing it into a more useful format, combining different types of data, and eliminating data which is superfluous. This assumes that first a careful assessment of information needs is made and all possible data sources are known. The importance of eliminating unnecessary data should not be underestimated. Data collection and even simple reporting is expensive and time consuming, especially if it requires checking with remote offices when inconsistencies arise. In Nepal, such clarification could easily require a two week walk for someone who could be more profitably employed. In short, by working with the bare minimum, greater attention can be given to data quality.

The baseline survey offers a classic example of mismanagement and bad planning for data collection. What happened was

predictable because technical assistance was either inadequate or not made available when it was needed. In this case, on both the Nepalese side and on the AID side, individuals without sufficient training or experience in data collection and analysis designed and managed the survey. Granted people gain experience in this area through direct involvement, but a training function is no excuse for jeopardizing the utility of the data collected. The message here should be no revelation by now: there has to be competency on both sides - AID and the host country - because data collection requires skilled professionals. If skilled individuals cannot be found in the ministry or among mission personnel, there is a plethora of short term contractors who could supplement either staff to at least avoid the more glaring mistakes. Fixing blame for what went wrong is utterly pointless. Moreover, I am sure there is no shortage of alternative examples of bad decisions affecting data collection and of data mismanagement. This survey is just one example of the point that AID needs to take data collection more seriously and give greater attention to the need for technical assistance for data related activities.

It should also be noted that the project director for Rapti uses his own Apple II plus for financial analysis and projections and for project reports. The monitoring system would seem an ideal application for a microcomputer. A data base management program

would easily handle the periodic file updates, summaries and calculations of simple percentages. However, the contractor for the project explained that located in a place as remote as the Rapti Zone is, a dust and electricity supply problem combined with hardware service difficulties led him to believe that a microcomputer might be impractical at the start. Retaining trained individuals in the district offices might also create a problem. Therefore, he decided to begin the system using a key sort file which could later be transferred to a microcomputer if it seemed warranted.

1.3 Health and Family Planning

Data collection for health, family planning, nutrition and population generally tends to involve more elaborate sampling designs, larger sample sizes, more repeated interviewing of the same respondents over time, and more precise measurement of key variables than ordinarily found in socio-economic surveys. In part this is due to the biological or human physiological type of data collected. For example, it is easier to get a precise reading of a pregnant woman's blood pressure than an exact measurement of how much land she and her husband cultivate each year. On the other hand, farming systems studies often involve meticulous collection of agricultural economic data, such as carefully

measuring the amount of fertilizer used or actually timing labor employed for different tasks. But generally such studies use fairly small samples and rarely approach sample sizes of a thousand or more respondents frequently used in health and family planning studies. This suggests that in some ways data collection of health and family planning purposes is substantially different from socio-economic surveys for agriculture and rural development projects. Perhaps they are so different that they should not be compared or grouped together. However, despite intrinsic differences in the type of data collected (e.g., blood pressure versus repansis planted in lentils), AID/Nepal's health and family planning program provides several very useful examples of data collection and data management that have direct implications for improving AID's use of quantitative data.

1.3.1 Family Planning/ Maternal Child Health Survey

Between 1975 and 1978 data were collected for a family planning and maternal child health care study. Technical assistance was obtained from the University of California, Berkeley. The survey consisted of three major data collection efforts and it is worth reviewing each.

A longitudinal study of family planning practices and fertility was conducted in four districts of Nepal. The districts

were selected on the basis of similarity of key factors - population size and density, number of hospitals, health posts, ethnic composition and the percentage of population illiterate. However, the districts differed in terms of physical ecology. Two districts were located in the Terai (Parsa and Dhanusha) and two were hill districts (Kashi and Gorka). Two additional districts - one in the Terai (Rupandehi) and one hill district (Syanja) - were also included in 1976. A sample of panchayats and wards was drawn proportional to population size. All married women between the ages of fifteen and forty-four were interviewed. Women who moved into the districts or were married during the course of the study were included. Due to these additions the number of women interviewed in 1975 - 5923 - increased to 7018 by 1978. Data were collected at four points in time as follows:

<u>District</u>	1975	1976	1977	1978
Kaski	x		x	x
Gorka	x	x	x	x
Parsa	x		x	x
Dhanusha	x	x	x	x
Syanja		x	x	x
Rupandehi		x	x	x

Data collection included complete pregnancy histories; social, economic and demographic variables; family size norms and family planning knowledge and use. The data were used to test for differences between two alternative FP/MCH programs - i.e., vertical

versus integrated service organization. The data analysis showed the differential effects of each program on family planning knowledge, current and intended future use, family size preference, and fertility and mortality rates. The analysis indicated that vertical programs were more effective on certain factors of population growth than were integrated services. Neither program seemed to have a significant effect on a number of other factors.

The second study tested whether an experimental health care worker training program was more effective than the conventional training normally provided. The health aides delivered the same services - information about sanitation, nutrition, immunization, oral rehydration for childrens' diarrhea, family planning and prevention of communicable diseases. They dispensed contraceptives, iron tablets and RD sole (a rehydration solution). Referrals to sterilization centers, clinics and hospitals were also made. The non-experimental workers received two weeks training in Kathmandu whereas the experimental group received five weeks training in their home districts. Twelve panchayats purposefully selected (rural, remote with little or no prior FP services) in / Gorka and Dhanusha were chosen for community based FP/MCH project sites. There were thirty-three experimental and thirty-four non-experimental health aides involved in the study. Four surveys over three years were conducted in five panchayats which had experimental health aides.

and five which had non-experimental health aides. Panchayat selection was random and sample size was proportional to population size. 1,527 women were followed during the course of the study. Experimental workers were found to have had a significantly greater impact on knowledge about family planning, ever use and current use of contraception.

A Fertility, Morbidity and Mortality Survey was the third part of the study. From three village groups with populations of approximately 10,000 (two in the Hill area and one in the Terai), 5,242 women between the ages of fifteen and forty-four were included in the sample. Socio-economic, demographic and family planning practice data were collected. Monthly interviews were conducted for twenty-one consecutive months in the Hill villages (because the Terai sample was included after the start of the survey, they were followed for approximately eight months). Data on pregnancy histories, post childbirth menstruation histories, lactation histories, hemoglobin levels during pregnancy and other physiological factors were collected. For their children under six years of age (a total of 6,952), morbidity histories, food consumption, physiological measures and hemoglobin levels were recorded. The analysis of these data provided a comprehensive picture of family planning and maternal child health care practices and conditions. Breakdowns by ethnicity, age, mother's

household status, and geographic location showed group variation on basic health and contraception indicators.

There is a good reason for presenting detailed descriptions of matters usually relegated to back appendices. I detect an unusually intelligent balance between pragmatic considerations - what is possible given field conditions, available resources and other constraints - and methodological considerations - what is necessary to meet reasonable standards of validity and reliability which will permit an acceptable degree of confidence in the results. Compromising methodological standards too far typically produces splendid looking but utterly bogus "pseudo data", while rigid adherence to statistical ideals becomes unrealistic given the cost and time limitations of applied research. If anything, the FP/MCH study demonstrates that workable solutions can be found even in least developed countries. The research designs are sufficiently sophisticated without being impractical or unworkable. It should be pointed out, however, that despite efforts to maintain data quality (e.g., the ratio of supervisors to interviewers was one to five), there was criticism of the study on precisely the issue of data validity and reliability. The study team of course refutes these charges. But even assuming that the quality of the data could have been improved, the question that needs to be answered is given the

project's intended use of the data, whether greater precision would have been necessary and cost effective. The issue that is sometimes overlooked is that less than highly accurate data (and no data are without measurement errors) can be sufficient for a project's needs. This is not an excuse for substandard designs or data collection procedures; rather, it is an argument for simplicity and reasonableness in design. What needs to be kept in mind is the immediate utility of the data and what additional usefulness will result from greater expenditures of time and money for more precise data.

1.3.2 Integrated Rural Health/Family Planning Services

USAID/Nepal has obligated \$34.2 million for the Integrated Rural Health/Family Planning Services Project. The project builds upon the Integrated Community Health Project and attempts to broaden the health care delivery system through better coordination and management of services which have been operating independently, such as malaria eradication and TB treatment. The project supports improved family planning, malaria control, measles immunization, oral rehydration for children's diarrhea, domiciliary treatment of TB, focused prenatal care, and first aid services. The project will be implemented in forty-eight of Nepal's seventy-five districts and service delivery will be accomplished using Panchayat Based Health Workers. In short, by improving the quality and quantity, appropriateness and accessibility of health services, the project is expected to

contribute to a decreased birth rate, lower mortality and generally improved health practices.

The IRH/FPS project will also generate much needed data on contraception through a Westinghouse Health Systems Contraceptive Prevalence Survey. Westinghouse has conducted similar surveys in a number of other countries, the data from which have been incorporated into the Population Information Program at John Hopkins University. Westinghouse is the primary contractor for two surveys, one at the national level and a second in four selected districts. The national level data will be used for planning purposes and for evaluation of Nepal's family planning programs. The district level data have been collected in areas where USAID has been very active. The data will provide baseline measures necessary for evaluating project impact. The data were collected by fifty-five interviewers who were given two weeks training in the use of the questionnaire. They were supervised in the field by individuals who had graduate training at least to the masters degree level or equivalent in economics, statistics or commerce. The questionnaires contained approximately one hundred and fifty items and were administered to 5882 individuals. Considerable preparation went into the sampling procedure to guarantee representativeness. However, the high number of male interviewers (fourty-one) was problematic for questions such as

"does your husband use a condom during intercourse?" The analyses of both data sets are expected to be completed by the Fall of 1982.

Both surveys should assist the Ministry of Health and the National Population Commission ^{to} improve their data bases. The availability of basic data on health and population in Nepal is limited. World Fertility Survey data (1976) are somewhat out of date. The Nepalese government conducts a decennial census which provides estimates of population growth and mortality rates. But as one USAID staffer pointed out, the last national health survey was twenty years ago and there is a critical need for better morbidity data. Similarly, a new nationwide nutrition survey is needed. This same individual explained that even more acute is the need for improved analytic capacity in the ministries, especially the National Planning Commission and the Central Bureau of Statistics (the latter is apparently being kept afloat by U.N. support). Most analyses are done by outside contractors because there are few competent local consulting firms. Finally, this person argued that future efforts to address these problems should offer solutions which decentralize data analysis and data management by building capacity at the regional or district levels.

Along these lines, one of the more interesting and important aspects of the IRH/FPS project is the use of microcomputers to

facilitate data collection, project monitoring and projections of various sorts. The National Commission on Population has two Apple II plus systems. Project funds were used to hire a programmer to modify the Futures Group's RAPID program to do projections of the effect of changing tax revenues on funding for primary education. The revenue source is a tax placed on agricultural output (PDLT). The program allows examining how different population growth rates (which affects school enrolments) or changing agricultural production, pricing, crop mix, etc. will affect the need for and availability of revenue for primary education. For example, given a population growth rate, projections can be made concerning what level of agricultural production will be necessary to generate sufficient revenues to meet educational needs. Like the RAPID program, the projections for a twenty year period are displayed by graphs such as the gap between available and the estimated need.

A mapping program based on data from Visicalc files, called Visimap Nepal, was also written for the National Population Commission. It is capable of displaying any district level variable on a map of Nepal. This includes computed variables such as population changes, agricultural production changes, etc. The program will also aggregate data by zone, region and lowland versus highland categories. Unfortunately, it does not calculate

any statistics, such as an F ratio to test whether differences between groups are statistically significant.

A program for projections was also written for the Agricultural Projects Services Center. Using an Apple computer, the center can make predictions of potential food shortages given alternative production estimates and consumption demand.

The Family Planning and Maternal Child Health Project (part of the IRH/FPS) also has two Apple II Plus systems. A Monthly Report System (MRS) was developed to store and summarize service statistics on some 1500 FP/MCH clinics throughout Nepal. The system will produce all necessary tables for monthly and annual reports. FP/MCH clinics and their Panchayat Based Health Workers report to the district office on their performance of services for the past month. The data are collated and forwarded to the central office in Kathmandu which summarizes the data using the MRS. The office can produce a table, for example, listing by district (grouped according to region and zone) the number of general clinics in the district, the number of Panchayat Clinics, a total number of clinics, the number of panchayats covered by the FP/MCH project, and the percentage of all panchayats covered. Monthly reports could list the number of services provided by the clinic, the number of new acceptors of contraceptives, the number of pills and condoms distributed, the number of vasectomies performed and totals to date.

The importance of making simple listings should not be underestimated. What should be kept in mind is that in Nepal, USAID is dealing with an emergent bureaucracy where reporting of basic information to district offices, let alone to central offices, cannot be taken for granted. Before the system was computerized, information from clinics ^{might} or/not have been submitted. If it was, it is quite possible that the sheet of information was simply skewered on a desk nail along with others where in time they rotted or were eaten by insects (that is no exaggeration). The central office now has the capacity to monitor which districts and clinics have reported to them. Moreover, when the system was first installed, it was found that the list of clinics was incomplete; some clinics had been entered more than once; others were listed that did not exist; for others, there were no data at all. The monthly reporting system eliminated this. Furthermore, the capacity now exists for improving the quality of information reported. When a clinic fails to report or reports obviously erroneous figures, the central office can direct the district office to check with the errant clinic and correct the report. In short, the application of a microcomputer based reporting system has led to significant improvements in the monitoring and management of FP/MCH clinics.

Several factors make this accomplishment all the more remarkable. Kathmandu is hardly a posh oasis of western conveniences. Electricity is a sometimes proposition and when the power is on, voltage and cycles fluctuate radically. Needless to say, this presents serious problems for users of microcomputers. (USAID/Nepal has only / ^{recently} managed to prevent its electric typewriters from burning out because of sudden power surges.) There has been no repair service available for microcomputers in Kathmandu until just recently. Both problems, however, have been overcome by the chief of the Health and Family Planning Office in USAID/Nepal, Dr. Jerold van der Vlugt. Dr. van der Vlugt is an electronics enthusiast who has been trained in the repair of Apple computers and is equipped with the necessary tools, scopes and whatnots to diagnose problems and correct them. He resolved the power supply problem with: 1) a power conditioner which controls for fluctuations in the electrical current when it is on and 2) an alternate power system for micros using a bank of truck batteries charged when the electricity is available. To truly appreciate this system, one has to see it in operation. I visited the Family Planning Center in Kathmandu where the two Apples are located. One of the great advantages of microcomputers is that they do not require the air conditioned, controlled environment of bigger computers. That is certainly one feature put to the test in

Nepal. The lower floor of the family planning building is a typical public service facility - the air reeking of disinfectant, halls and lined with women carrying wailing infants, /small children running about. But on one of the upper floors, in a small dimly lit room, sit two Apple computers above a bank of truck batteries silently glowing. The visual impact is almost surreal.

USIAD/Nepal's experience concerning the use of microcomputers to facilitate ministry operations under conditions too adverse for alternative systems or where the expense of more sophisticated equipment is unwarranted could be of importance to the entire Agency.

A key element in the success of this system is that it was applied to a task which was already being attempted manually.

Through the use of the microcomputer with the right software (in this case, custom designed), the ministry has first hand evidence of how their tasks could be accomplished more quickly and accurately. A second key factor was the presence of someone knowledgeable about the use and maintenance of microcomputers.

The Agency cannot assume every mission will have someone with a strong devotion to the expanded use of microcomputers. There is no doubt whatsoever that Dr. van der Vlugt is the driving force behind much of the current use of micros in Kathmandu. It is worth considering ^{what} /would happen to these systems when he is transferred - e.g., how will USAID respond to maintain what are unquestionably very useful systems?

Some important lessons were learned in the training elements of these projects. An attempt was made to train a number of government workers to use the Apple based systems. The programmer even developed a special training manual with exercises requiring the use of Visicalc, for example. The success of the training sessions was far below what was desired. It proved far harder to train people than was anticipated. In part, the problem stemmed from working with individuals the government assigned to be trained. Thus, problems might have been a result of low motivation or simply too little basic education. Consequently, future training will be more selective concerning who is admitted to such programs. Second, training individuals not directly involved with the tasks the Apple based systems perform is problematic. Training should be a type of on-the-job experience rather than a demonstration of what might be possible using a microcomputer. Individuals will be more eager to learn if what is taught is directly applicable to their present jobs.

USAID/Nepal's experience also contains a much larger issue concerning the place of microcomputers in improving the quality of data and data use. The traditional model has been a standard problem oriented, research approach. First the overall problem is identified, refined, operationalized, etc. so that data needs can be clearly specified. An appropriate methodology is selected or developed and through diligent and meticulous attention to

all aspects of the data collection process, high quality data is produced. Therefore, if data quality suffers from too few experienced supervisors, the solution is technical assistance and training; from too few experienced interviewers, then give them better training, and so on. The basic idea is simply application of standard research methods to difficult field conditions for applied purposes. In this model, computers play a secondary support role; they merely facilitate the primary task at hand.

An alternative model is emerging from the growing use of microcomputers in development projects. In this model, because of various characteristics of the machine, the microcomputer becomes the impelling force behind the improvement of data quality. Because they decentralize data use (in a sense, putting "the power" in the hands of many more users) and facilitate data manipulation - both by removing much of the boring tedium of it and doing it infinitely quicker (especially as the number of cases expands) - the inadequacies of the data per se are highlighted. The FP/MCH project is the best example of this process I have encountered. Without the Apple and the reporting program, the Ministry of Health would still be mired in an absolute morass of inaccurate, incomplete and out-of-date information about the performance of its own clinics. With the system, the ministry is able to keep as informed as conditions permit about the activities of health clinics located even in remote parts of the country.

In this alternative model, the microcomputer is at the center of the process leading to better data. I think that we have just witnessed only the start of what is to come as a result of this technology. I will spare the reader from my speculations on what will be possible in the very near future. Rather, consider the fact that the traditional model has been around since Day One and has been something less than an overwhelming success. The most common complaint made concerning data is that the primary problem in country X is atrociously poor data. In large part, the traditional model has been hamstrung by cumbersome computer systems inappropriate for developing countries. It might be the case that with the advent of microcomputers the technical assistance and training component of the traditional model may now become more efficacious. In any case, it is clear that present microcomputer technology circumvents some limitations of alternative systems and will have increasing application for development projects to improve data quality and analysis.

1.4 Program Level Data Use

However difficult the situation of USAID/Nepal is in regard to available data and analytic capacity for project purposes, data use for mission level, program documents such as the CDSS is considerably more problematic. The program office depends heavily on the information Nepalese ministries provide in their reports. The office does not hire contractors to undertake special surveys or supplement their analytic needs as the

project side can as part of ongoing projects. Moreover, the program office has no control over what data will be released to it by the Nepalese Governemnt.

In Nepal the data reporting cycle is particularly troublesome. Setting aside questions of data quality, the Ministry of Finance only publishes data at the beginning of the Nepalese year. The Government of Nepal follows the lunar calendar, meaning that their months begin and end in the middle of western months. Nor do the western and lunar calendar years correspond. Consequently, the program office obtains approximately nine western months of data for the past year from budgetary reports. The ministry releases data only once a year. Information on national budget planning, balance of payments and other donor disbursements can only be obtained from the Nepal Rastra Bank (the national bank). The timeliness of the data is also problematic. There is usually a six month wait between the end of the reporting period and the actual publication of the data. One USAID staffer speculated that the reluctance of the Ministry to be more forthcoming with such data is that they themselves do not trust its quality. Therefore, it requires some time to "gin up" a better looking data set. The program office must rely on the Nepalese census data which is also of dubious quality in part due to the use of poorly chosen enumerators. For example, urban residents

are used as enumerators in rural areas which could produce a biased reporting by respondents.

The analytic sections of USAID/Nepal's three full CDSSs - FY81, '82, and '83 (in FY84 the mission submitted a Small Program Statement) - illustrate the difficulty of the situation. The CDSSs rely heavily on national aggregate statistics. Only a handful of variables are disaggregated by geographic location (e.g., Terai vs. Hill comparisons of income estimates, food grain production). Data sources are some instances five or more years out of data (for example, the FY82 CDSS uses data from the 1972/73 Industrial Census). Moreover, there is little genuine analysis in the CDSSs. For the most part, the analytic sections tend to consist of broad descriptions of the severity of conditions in Nepal.

The economic analysis in the FY83 CDSS is a substantial improvement over the preceding years. Balance of payment data for five fiscal years clearly showed the urgency of improving Nepal's export program for both agricultural and manufactured goods. Using results from the Integrated Cereals Project and the Cropping Systems Program, the CDSS reports production and consumption estimates comparing historical trends to what might be possible in the next decade with successful farm level interventions - e.g., improved cropping systems especially in Hill areas.

However, some might object to the simplicity of these projections - given an estimated adoption rate of W with a production increase of X , projected output of crop Y is Z .

It is worth considering how much improvement in the analytic section of USAID/Nepal's CDSS is necessary or even possible. Is it reasonable, for example, to require more sophisticated economic analysis or projections given the difficulty of obtaining even approximately accurate data? Would the improvements to program planning that resulted from better analysis really justify the greater amount of time and effort required, especially given the limited availability of data and the additional time this would require of analytically trained staff? I have no easy solution for the data problem, but more effort for better analysis and planning is certainly justified. Moreover there are more staff in the mission able to use data effectively than most are willing to admit. In any case, the Agency, and PPC in particular, should give long and hard thought to these matters before making any such demands. The question whether the CDSS can be made analytically sounder should be given special consideration.

In fact, AID/Washington has been of little assistance to the mission in this regard and, in some instances, might have been more hinderance than help. I learned that in one year in preparation for the Congressional Presentation, the Central Bureau

requested that the mission review national aggregate statistics contained in the ALLDATA file. The program office assigned one of its staff members to the task which required three months of work to justify and correct the file from local sources. The corrected file was returned to Washington with the belief that the file now contained data as accurate and timely as possible. The best that could be learned about subsequent action concerning the file for Nepal was that the Washington office apparently did not agree with the corrections (how they "knew better" is not known) and, therefore, changes were ignored. To make matters worse, the mission does not even use the ALLDATA file for essentially the same reasons AID/Washington does not use it - e.g., much of the data are not timely, comprehensive or detailed enough to meet any real information need of the mission. It is no exaggeration to say that this exercise was an utter waste of time counter productive to the mission and forced upon it by AID/Washington.

What the program office might consider as a means of improving its use of data for better planning is greater use of subnational data that USAID projects have or will produce. The CDSSs repeat a standard litany of indicators - the population growth rate is 2.6%, the infant mortality rate is 150 per 1000, one out of four children born dies before reaching the age of four,

the average daily work wage is 17¢, etc. There is denying that these statistics describe a grim situation. But as the FY84 Small Program Statement points out, the mission's funds are very limited. Therefore, resources will have to be concentrated where they will be of most benefit and contribute most to long range goals. Thus far, the mission has certainly refined its planning in this general direction. It has focused its program on a set of national level problems and on local level problems within a selected rural area. A next logical step might be further refinement based on variation of key indicators. That is, those oft cited statistics are certainly not uniform throughout the country. Variation in these indicators by geographic location, ethnicity, crop production, etc. could be used to guide the mission's future project efforts. For example, it would be useful to know which districts have the highest growth potential - e.g., population size x growth rate \pm migration. Similarly, it would be useful to know where the total potential infant mortality rate is highest. Of course mission staff could best determine which types of sub-national data are most needed and which analyses are most useful.

To a certain extent, the current program of USAID/Nepal appears to have committed the mission to greater use of subnational data. For example, USAID/Nepal's program objectives are to "... reduce the high birth rate, slow the process of environ-

mental degradation, and accelerate the process of rural area development in specific parts of the country." (1980:19-20) The FY82 CDSS stated:

"... at the end of the next five years it should be possible to measure progress, in real terms, in creating conditions conducive to bringing these changes about." (1980:20)

To do this will require substantial analysis which compares prevailing conditions in different sections of the country. But it is less clear how these analyses will be produced. Nepalese ministries will have to do part of the work with contractors' reports supplementing their work. But it is questionable whether the mission can do any additional analysis. Even though some mission staff certainly have the skills and experience, their workloads make it virtually impossible for them to be involved even in a supervisory fashion. Even assuming there was worktime and access to the necessary data, there is no automated data processing equipment officially available to the mission. If the mission is to make even simple uses of pertinent data, a capacity to obtain and store quantitative data must be developed.

Until recently, under AID/Washington policies, even a basic word processing capability would have been impractical. The policy has been to install only Wang equipment and there is no

service for Wang in Kathmandu. But SER/DM's recent decision to install microcomputers and provide necessary support changes this situation. A couple of microcomputers using the power supply system designed by Dr. van der Vlugt (he could even service Apples as well) and inexpensive letter quality printers could provide the basic capacity required. This would facilitate management reports and financial accounting. It would also develop an in-house capability for information storage and retrieval and other data related activities. Analyses for both project and program purposes could be done by short-term contractors if the staff did not have the time or skill to do so themselves. An additional possibility is exchanging data directly with GON ministries and other international agencies active in Nepal as they too acquire microcomputers or other compatible systems.

1.5 Summary of Main Points

The main points concerning USAID/Nepal's present data collection and analysis activities are as follows:

- 1.) The mission is dependent on the GON for much basic data, particularly for program purposes. However, GON ministries have a very limited capacity to collect accurate and timely data especially given the adverse physical conditions of Nepal which greatly complicate data collection.
- 2.) USAID/Nepal's on-going projects will generate important agricultural, social and economic data useful to the GON and the mission if activities

go according to plan.

3.) Efforts are being made as part of USAID funded projects to increase the capacity of GON ministries for better data use. The GON is generally receptive to improving its data bases and analytic capacity. There is good reason to believe progress will be made in this area. To date efforts to improve both the quality and use of quantitative data for health and family planning purposes have been most successful.

4.) A major constraint to improved data use within USAID/Nepal has been the lack of access to computers and necessary data as well as too little work time and support for such activities.

II. USAID/Egypt

Overview USAID/Egypt is the Agency's largest mission. It has a direct hire staff of one hundred and twenty-three supplemented by a substantial number of foreign nationals. These numbers must be viewed in light of the current funding level of the mission. For the last fiscal year, the annual budget was approximately \$750 million which funded more than one hundred projects. Given the scope of the mission's operations, involvement with quantitative data varies substantially from project to project and among the different offices within the mission. However, some generalizations about the mission's use of data and factors affecting that use are possible.

A number of USAID/Egypt's projects involve data collection with special emphasis given to increasing the institutional capacity of Egyptian ministries to conduct such work independently or with minimum assistance in the future. Several will also establish Planning and Evaluation units and train Egyptian personnel to staff those offices. Some projects have involved substantial collection of very detailed or comprehensive data (e.g., agriculture and health) and others propose extensive data use (e.g., the Basic Village Services Project). Much of this data has potential utility for USAID and the Government of Egypt for improved planning. It appears, therefore, that USAID/Egypt is making some headway in this regard. Furthermore, the mission has the potential

for greater use and management of quantitative data than many other missions because: 1) the mission's Wang mini-computer represents a standing investment of approximately \$300,000 and expansion of the system is planned in the near future giving it ample capacity for data processing (see McMahon, et al., 1982) and 2) the mission's staff includes a number of individuals with the training and/or experience to use quantitative data effectively for applied purposes.

However, very little work involving the use of quantitative data occurs in the mission. Staff workload does not permit involvement with data related activities to any significant extent and there is little encouragement from senior management either in the mission or in Washington to do so. Project implementation consumes the bulk of the staff's work time. Though data use might facilitate tasks, it is generally viewed as a luxury that time does not afford. On the other hand, many mission staffers reported that their information needs are not being adequately met and some stated that the use of information in their section of the mission ranges from haphazard to chaotic. Despite the availability of a mini-computer, most data that the mission possesses is stored in contractor project reports of one kind or another which does not facilitate its use by USAID staff. Processing quantitative data for even the simplest purposes is

not practical because no readily usable software is as yet available to the mission. The computer has been used extensively for word processing and only marginally for information storage and retrieval (e.g., the DIU system). At the same time, there are needs for the most uncomplicated of data uses. For example, several mission personnel/^{said} they could use a simple program which would store and then list, tally and average project data, such as for training programs. Current information problems are certainly not a reflection of the computer system's capabilities. Perhaps in time as more acquire the necessary skills and the system is expanded as planned, better data and information use will result.

Observations made by mission staff suggest that USAID/Egypt's progress in data related activities and in its efforts to build the institutional capacity of Egyptian ministries for statistical work should be viewed cautiously. The sheer number of projects funded by the mission would predict that a certain proportion would involve data use. This creates the impression of a high degree of involvement with quantitative data. Budgets in excess of \$30 million make the cost of data collection manageable for a greater number of projects. But that does not necessarily mean that the data is used effectively or to its fullest potential by the mission or by the Egyptian government. Some even

questioned how genuine the commitment to improved or expanded data use was by USAID and particularly by the Egyptians. They pointed out that data collection and analysis are sometimes included to satisfy funding requirements. It is uncertain, therefore, whether sustainable and lasting improvements are being made or whether current project data use is merely a function of funding requirements.

Two main factors were commonly cited which account for this more critical view. Foremost is the predominance of foreign policy objectives - both on the part of the U.S. and Egypt - over developmental concerns. The astronomical level of funding USAID/Egypt now receives constitutes an important part of the American guarantees underpinning the peace accords between Egypt and Israel. As USAID/Egypt's FY83 CDSS states, political stability in Egypt is of paramount importance. Under such circumstances, the use of quantitative data is relegated to an even lower priority than it usually receives. Because foreign policy objectives/involve ^{which} spending two million dollars a day in Egypt take precedence over purely developmental issues, data pertaining to the development process are similarly made less important. Though political factors affect USAID's activities in other countries as well, mission staff stressed their extreme importance in Egypt.

The second major factor is that some Egyptian ministries attribute little importance to data collection and analysis as a guide to decision-making. Planning and strategy development are again very heavily influenced by political considerations and, in particular, by the political consequences any change might have. Some suggested that even the most compelling argument based on high quality data which suggested changing pricing policies, for example, would produce little change in the Egyptians' position. The possible consequences of such a change are entirely too threatening to be politically acceptable regardless of the economic soundness of policy revision. From such a perspective, it does not really matter what the data indicate. Apparently, the situation is not quite so intractable. Evidence showing potential improvements to the Egyptian economy if policies were revised at least serves as a basis for a continuing dialogue on the matter.

Political concerns aside, some ministries hold rather contradictory views concerning quantitative data. On the one hand, there is no long-standing tradition of using quantitative data for systematic, rational planning. Some ministries have collected data only after considerable pressure was placed upon them by USAID (e.g., threatening to cut off funding). In other words, some ministries simply go through the motions to placate external demands, whereas they have little felt need for data use. From

their perspective, USAID and westerners in general are overly fixated on data collection. On the other hand, the Egyptian government is a massive and complicated bureaucracy. The ministries very much recognize the power of possessing and controlling access to data. Some report that such proprietary views can make obtaining data from the ministries very difficult, especially when the data touches on politically sensitive matters.

policy

The overriding foreign / concerns of the U.S. and the Egyptian governments and the non-quantitative orientation of certain Egyptian ministries constitute the context in which data use in USAID/Egypt should be viewed. The difficulty of improving data use becomes more understandable and progress the mission has made in this area through certain projects is all the more noteworthy. These factors may, to a greater or lesser extent, also affect USAID operations in many other countries. Therefore, USAID/Egypt's use and involvement with quantitative data are relevant to other missions and the Agency as a whole.

2.1 Agricultural Resources

The strategy AID has outlined for the agriculture sector in Egypt focuses on increasing production, labor productivity, output per unit of scarce resource and rural employment. This goal is to be achieved by facilitating agricultural technology

transfers, revision of agricultural policies and institutional development for sustained progress in various aspects of Egyptian agriculture. The Agricultural Resources Office is currently funding twelve projects designed to contribute to these goals. The total amount obligated over the life of these projects is \$220,709,000. The average project budget is slightly more than \$18.4 million and if four small projects (total budgets of \$5 million or less) are not included, that average increases to \$22.4 million. Thus data collection is easily affordable in these projects and in some cases, is indispensable to them.

A number of these projects involve extensive data collection and analysis components. Data is being collected to meet project needs and to develop data bases useful for research and planning by USAID and the Egyptian government. In 1980, the Agricultural Sector Strategy Update stated that as a result of project activities:

"By 1982 there should be an analytic basis for input, output pricing, distribution and marketing system in effect, better data on which to plan GOE interventions in poultry, mechanization and irrigation and a better identification of particular problems previously hidden by the overall, larger constraints." (1980:5)

The Strategy Update pointed out that additional resources should be directed to data for policy and planning and for building the analytic capabilities of Egyptian ministries involved with agriculture because:

"Farm level data for analysis is scarce. Most analytic work is narrow and partial and stops short of laying out the implications of various options. Funding for policy research is inadequate and planning is largely a budgetary exercise. Information does not flow well within the system." (1980:7)

The authors also point out that improving the supply of fertilizer to farmers is handicapped because "(T)he scarcity of data on input demand makes planning even more difficult." (1980:9) Similarly, in regard to improving existing irrigation systems (designed over fifty years ago) or re-designing the system to be better attuned to present energy costs, cropping patterns and increased non-agricultural demand for water, the authors state "(U)nfortunately, the information needed for definitive answers to these questions is incomplete, despite the progress in data gathering over the last two years." (1980:10)

Progress toward these objectives has been made in the past two years, though not as much as was desired or anticipated. Data on input, output pricing and the distribution and marketing system of agricultural productions has improved. As for leading to direct interventions by the GOE, AID staff report that at present data serve primarily to stimulate discussion about possible future policy changes. As for the other problems, farm level data is still scarce, information about Egypt's irrigation system is still being collected, analytic work needs to be improved further, and the general flow of agricultural information remains inadequate. In these problematic areas, then, the situation appears to be essentially unchanged. Given the context in which USAID/Egypt and its projects are operating, it might have been overly optimistic to expect to resolve key information problems in just two years. More important, the potential for these improvements to occur in coming years has been created in agriculture perhaps to a greater degree than in any other sector of the Egyptian economy.

In part this potential is due to the critical importance of maintaining if not increasing the rate of growth in agricultural production. Continued growth will be difficult because of limited land resources. Cropping intensity is already quite high and perhaps is reaching the upper limit possible. In terms of yield per hectare, Egyptian farmers have obtained comparatively

high levels through the use of reasonably good seed varieties, irrigation and moderate amounts of fertilizer. On the other hand, the Egyptian population has been increasing steadily and the rate of urbanization is accelerating. It will be essential to meet food demands in the coming years without radically increasing imports if the Egyptian government is to maintain economic and political stability. Consequently, there is a certain receptivity to information about more efficient use of natural and human resources, improving infrastructure and transferring or developing appropriate technologies to increase agricultural production.

According to USAID staff, unlike other ministries, the Ministry of Agriculture is genuinely interested in improving its information bases. At present, the quality of available data provided by the ministry varies by crop. It was reported that data for cotton and sugar production is quite good while data for wheat and corn is generally poor and less useful. For alternative crops, such as garlic, onions and melons, not enough good data has been collected. Improvement of such data is considered to be quite possible. The current head of the ministry recognizes the importance of good quality data and supports efforts toward this goal. A number of key individuals who hold high positions within the ministry are well trained and supportive of improving agricultural data bases. Individuals appointed by the ministry

to head AID funded projects understand the utility of sound data collection and analysis for achieving project goals. There is also a general familiarity with data collection within the ministry. Unfortunately, competent individuals are often assigned to other tasks and at middle and lower levels within the ministry, many are not adequately trained in agricultural economics or related fields. Though this impedes improvements, USAID staff believe that ^{with} proper leadership and the necessary impetus from ministry officials, MOA staff are capable of performing data related tasks reasonably well. (Defining precisely what "reasonably well" refers to is difficult to say since the quality of agricultural data is precisely what current projects are attempting to improve. It is safe to say that the Ministry of Agriculture has the human resources for certain types of data use, whether those resources are used well is very questionable).

Every project USAID/Egypt is funding which involves data collection cannot be reviewed here. It is necessary, therefore, to focus on selected projects which exemplify the mission's present use or involvement with quantitative data. The two largest agriculture projects - Agricultural Mechanization and Major Cereals Improvement - involve substantial data collection and analysis, some of which is socio-economic in nature. They will provide the type of data described above that will help meet Egyptian and

USAID information needs. A comparatively small project - Agricultural Data Collection and Analysis - is obviously important to this report. The project is directed exclusively to developing the capacity of the Ministry of Agriculture to generate accurate and timely agricultural statistics.

2.1.1 Agricultural Mechanization

USAID has obligated \$40 million over six years for the Agricultural Mechanization Project. AID will provide technical assistance, commodities and loans or research funds to: 1) establish a planning and evaluation unit; 2) support planned land improvement through subsoiling and levelling; 3) develop a system of machine service and repair centers throughout the country; 4) establish a Farm Mechanization Research and Development Center which will conduct applied research on technical, economic and social aspects of mechanization; and 5) develop a machinery management extension service which will inform farmers of proper use and maintenance of equipment. According to the project paper, the goal of these activities is to build Egyptian capacity to "choose and implement mechanization efforts that provide needed services and inputs to rural producers when and where needed at reasonable prices." (1979:7) The authors of the project paper argue that greater mechanization is consistent with USAID's sec-

tor strategy of increasing production. Increases should result from better seedbed preparation, better seed placement, more timely planting and harvesting, and reduced harvest losses. Negative effects on rural employment are anticipated to be minimal. The project also reinforces the Major Cereal Improvement and the Water Use and Management Projects by providing mechanization important to the success of these projects.

Unlike other projects, several agricultural surveys were conducted to obtain necessary data for the design of Ag. Mechanization. In 1978-79. ERA 2000 (a consulting firm) collected data on farm management, equipment ownership and use, and farmers' attitudes toward further mechanization. The data were used for a feasibility study - "Further Mechanization of Egyptian Agriculture" - which determined whether additional mechanization was an appropriate development strategy for Egyptian agriculture. On the basis of their findings, the feasibility study team concluded a major project in this area was warranted. The current project is a far more conservative version of the initial proposal. However, the findings and general recommendations of the study team were used for the design of the Agricultural Mechanization Project.

The first survey collected data on farm management practices with special reference to how mechanization affected those practices.

Approximately four hundred farmers selected from seven cropping zones were interviewed about their ownership of machinery, labor use, timing of farm operations (e.g., field preparation, planting, etc.), and crop mix. Inadequacies in the survey methodology reduced the reliability of the data. But such data are scarce for Egyptian agriculture and one supposes that as long as the shortcomings of the data are known, less than perfect data is better than none at all.

The second survey conducted by the feasibility team developed a farm machinery inventory. 2500 cooperative managers (Ministry of Agriculture employees) reported on equipment ownership and use in the villages to which they were assigned. The data were used in the project paper to determine 1) the number of different kinds of equipment used and what percentage was privately owned; 2) differences in the condition between privately owned versus cooperatively owned tractors (by age of machinery); 3) custom-hire tractor use by farm size; and 4) hours of use by type of use disaggregated by ownership. These tables proved useful for estimating the potential effect further mechanization might have on the employment of agricultural workers. Data on the various pieces of farm equipment contributed to the beneficiary analysis presented in the project paper. Here is one positive example of where the appropriate data analyzed very simply facilitated project design and project approval.

A third survey examined farmers' perceptions and attitudes toward further mechanization. A sample of 158 farm families (I assume head of household) from nine selected villages were interviewed concerning farmers' perceptions of benefits derived from mechanization, their current problems and their knowledge about and ownership of different types of equipment. As one might guess, farmers were interested in mechanization, farmers with larger landholdings were especially interested and many cited obtaining credit to purchase equipment as ^{the major} /constraint. The project paper used the data to show farmers' problems (where interestingly enough, the shortage and expense of machinery only ranked fourth in importance among seven problem areas) and farmers' perceived benefits (which did not correspond with the government's anticipated benefits - i.e., farmers ranked increased income only fifth among nine possible responses). It is worth considering the utility of attitudinal data for a project of this sort. I do not find it a revelation that farmers are interested in tractors and that equipment is more important to large farmers who can afford it, need it, etc. more so than small farmers. In the Inception Report, the primary contractor for the project also found little use for this data; at best the attitudinal data "suggest certain trends". But what can be done in light of such "suggestions" when it had already been decided that USAID would fund a mechanization project. Given that decision, it was too late to use the data

to choose among alternative interventions. It is worth considering how this particular project would have even used such data in the first place. The problem is a chicken-or-the-egg comes first issue . Do attitudes determine behavior or are attitudes shaped to correspond to behavior as a response to external conditions?
 is
 This/a rather esoteric question for an agricultural mechanization project to resolve and that is precisely the point. For all practical purposes, the project should focus on providing the objective, external conditions (e.g., service facilities, extension, etc.) conducive to greater mechanization. How attitudinal research facilitates that effort remains to be seen. More important, the time, money and manpower that went into collecting this data could have been used to collect better farm management data than what was obtained by the feasibility study. This example suggests that USAID should give more critical thought to how resources are expended for data collection and analysis and to the necessity or utility of attitudinal research for projects like agricultural mechanization.

The primary contractor for Agricultural mechanization is Louis Berger International with Checchi and Co. and Development Alternatives, Inc. as subcontractors. FINTECS, an Egyptian consulting firm, was a third subcontractor on the project. The Inception Report of August, 1981 includes a description of data

that the contractors plan to obtain for the first part of the project. Their plan is to collect specific types of data after first thoroughly reviewing available agricultural data pertinent to mechanization. A number of agricultural surveys have been conducted in Egypt, but the data is of generally low quality. For example, poorly designed questionnaires which contained ambiguous or ill-defined questions made it difficult for farmers to answer accurately. Nonetheless, these survey data will be acquired along with other/ ^{agricultural} data from the Ministry of Agriculture, the Central Agency for Population Mobilization and Statistics (CAPMAS), and the Principal Bank for Development and Agricultural Credit. These agencies will provide primarily national aggregate statistics. Sub-national level data will be obtained from government branch offices and village banks in the five governorates. When specific project sites are chosen, cooperative records will be used for data on size of holding, cooperative machinery use, and fertilizer and seed purchases. As the report observes, "(T)his effort (to locate data) ought to be of interest to others with similar data requirements".

While data obtained from this search are analyzed, a survey will be designed to fill the gaps in the existing information base. A tentative list of what data will be assembled for the project includes: 1) agricultural labor supply and demand;

2) seasonal daily wage rates by crop; 3) labor requirements for each category of farm operation by agro-climatic zone of the country between 1970 and 1980; 4) yield, crop distribution and rotation patterns by governorate from 1970 to 1980; 5) current machinery inventories; 6) private sector tractor and machinery sales from 1970 to 1980; 7) a list of all machinery dealers and manufacturers, type of equipment sold for the entire country; 8) yield and input data by crop including water supply, fertilizer use, labor and seeding density; 9) yield differentials due to planting and harvesting dates; 10) loss due to storage and transportation; 11) animal and meat production related to mechanization; and 12) energy requirements by farming system. A project impact survey is also proposed which will correspond to the 1983 and 1985 evaluations. To control for extraneous factors or historical trends which might distort the findings, a control group of matched villages outside of the project will be included.

All of this data will be directly useful for establishing the farm mechanization planning and evaluation unit. The collection of both quantitative and qualitative data will help train staff for the unit. In terms of developing an analytic capability, the project will employ modelling techniques to evaluate mechanization alternatives using data on crop yields, costs, returns,

labor requirements and technological efficiency. For example, using cost benefit analysis, the net present worth for two alternative strategies can be plotted against discount rates showing at what rate (the crossover) one alternative is preferable to another. A macro-economic model focusing on costs and returns will be developed for policy analysis. The socio-economic impact of mechanization will also be explored.

The project has already produced some useful analyses which have been made available to the MOA and USAID. For example, a survey of 130 farmers collected data on water lifting methods and production. The costs and comparative advantages of five different systems - four animal powered and one mechanical(pumps) - were determined. Cost/benefit analysis showed that mechanized water lifting was economically preferable to traditional animal powered systems. The analysis also showed that one of the costs of non-mechanized systems was reduced milk production in working animals (this held true for both winter and summer seasons). An additional benefit of mechanization in this case would be increased dairy production. In short, the project promises to deliver much useful information about Egyptian agriculture, some of which has not existed before. The data will assist future planning for agricultural mechanization and should also be of assistance to other agricultural projects.

2.1.2 Major Cereals Improvement

\$47 million has been obligated for the Major Cereals Improvement Project. The major goal of the project is to improve the economic and social condition of grain producers. Through increased production of wheat, maize, sorghum and barley, the project will contribute to Egypt's food security. Production increases will also reduce imports, thus helping^{to}/establish a more favorable balance of trade. The project is expected to produce indirect benefits as well. For example, increased income should stimulate demand for consumer goods and services. Appropriate technologies specifically designed for Egyptian agricultural conditions and acceptable to Egyptian farmers will be developed. Research scientists will work closely with farmers under actual field conditions. Production increases will be achieved by providing farmers with new technical information, improved seed varieties and adoption of better farm management practices. Increased production might be as great as twenty-five percent and entail no new major costs since fertilizer and pesticides are already widely used. A major restructuring of cereals research and extension services within the Ministry of Agriculture is planned. Considerable importance is also placed on reaching farmers with applicable research findings as they become available and encouraging farmers to adopt these new practices.

Like the Agricultural Mechanization Project, Major Cereals Improvement has a large research component. The major contractor on the project is the Consortium for International Development. Ministry of Agriculture staff participate directly in the project as well. A project as highly research oriented as this one naturally places a high priority on quantitative evaluations. The first step in developing the necessary data base was : the collection and analysis of existing research findings pertinent to the project. A series of data collection activities throughout the course of the project will significantly expand the amount of available data. Crop yield estimates, for example, will be indispensable for monitoring project progress toward increased production techniques. In addition to agro-economic data, the project will investigate the sociological aspects of farm management to determine how the acceptance of new information can be broadened. Training Egyptian counterparts in various analytic techniques is expected to expand MOA capacity to conduct similar research after the conclusion of the project. In particular, they will receive training in plant breeding, agronomy, biometrics, entomology, plant pathology, research station management and economics.

The project has made progress toward developing a research data base. Macro- and micro-economic data have been collected and farming systems research is underway. Two economists who

provide technical support to the Economic Statistics and Farming Systems Research Unit reported that detailed cost of production data has been collected. Evaluation of the project's agronomic experiments have also been carried successfully. The project has established demonstration plots in sixty-seven districts. To show the effect of project interventions, crop yields from farmers included in the program are compared to yields from farms not in the project. The comparison groups are randomly selected and socio-economic data about farm practices and knowledge about improved farm management techniques are collected. Experiments have focused on different crops during the course of the project - sorghum and maize in 1981, wheat in 1981-82, soybeans, forage, legumes and lentils in 1982. The economists stated that they are fairly confident in the quality of the production data. Professionals closely supervise the enumerators working on the project, many of whom have graduate degrees in related fields. However, they do not have the same confidence in the sociological data that was collected. They reported that in the regression analysis of crop yield data, the agronomic and economic variables predicted as one would have expected. But the signs for the more sociological variables were in the wrong direction (e.g., higher knowledge of farm management practices negatively predicting crop yield). Consequently, the statistical economist decided to

delete these variables from the analysis.

One very interesting finding was that an experimental effect was found. That is, even controlling for agro-economic variables, the fact that the farmers knew they were part of the study - the experimental group - and were compared to others who were not, was a significant predictor. That is, production for the experimental group was higher as a result.

Interestingly enough, the two economists accounted for this effect by attributing it to the fact that the demonstration plots were contiguous that those in the project identified with each other as a group, and other similar reasons all of which sounded like a perfectly sound sociological explanation. In other words, a part of the increased production was due to the organization of the farmers as a group with a common focus of activity as opposed to individuals pursuing their own ends. It is odd that on the one hand, the sociological data were considered to be of questionable validity while on the other, a "dummy" categorical variable (was the farmer in the experimental group or not) was not only a significant predictor, but was accounted for in the most sociological of terms. This is a relatively minor point but one worth making. Both economists impressed me as extremely competent and very careful researchers. But they were economists, not sociologists and in this case, they were assigned to handle the sociological data. It would seem logical that if USAID pro-

jects employ economists to do economic analyses, then a sociologist should deal with the sociological analyses . Perhaps the decision to dismiss the sociological data as unreliable was correct, but perhaps something useful was there which was not apparent to non-sociologists. It would be unfortunate if some sort of organizational factor was affecting the results because it appears that this will not be investigated further. In short, the Agency ought to make sure that the appropriate expertise is available when it is needed to guarantee that all aspects of data analysis is done as thoroughly as possible especially for projects as amply funded as this one.

2.1.3 Data Collection and Analysis Project

USAID/Egypt is funding a comparatively small project - \$5 million over five years - designed specifically to expand the capacity of the Ministry of Agriculture to collect accurate and timely agricultural data and analyze it for planning and policy purposes. Approximately half of the project's funds will be used for technical assistance for the ministry's statistical division - the Agricultural Economic Research Institute - and for training Egyptian staff in sampling, data collection and analytic techniques. Technical assistance is being provided by USDA - the Economic Research Service and the Statistical Reporting Service - and by Carl Gotsch, Inc.

The project will contribute to increased agricultural production. Present agricultural policies constitute a major constraint to increased production due to 1) inefficient allocation of agricultural inputs; 2) contradictory objectives; and 3) limitation of certain commodities necessary for accelerated growth/the agriculture sector. Policy makers are hesitant to make major changes because the political ramifications of such changes are unclear and, therefore, extremely threatening. What small changes that are made seem to be politically motivated, ad hoc and in some instances, counterproductive to economic development. The authors of the project paper argue that part of the problem is the lack of adequate data and the inability to analyze it to provide guidance for agricultural planning and policy revision. In other words, part of the problem is due to operating in an information void. Improving the capacity of the ministry to collect and analyze data will help eliminate the uncertainty about the agriculture sector and contribute to more rational decision-making.

The project will attempt to install greater reliance on quantitative data as a normal and necessary part of planning and policy work. As mentioned earlier, many senior level officials recognize in principal the utility of improving agricultural data bases. This recognition is not as pervasive at middle

and lower levels. Nor is data used sufficiently in the routine operations of the ministry. This is due to a lack of training among lower ranking staff and the lack of positive experiences where quantitative data actually facilitated accomplishing a task. Worse yet are the negative experiences where data only complicated the situation further. The project will try to provide these positive learning experiences by addressing problems MOA staff presently confront. Through such examples, ministry staff will receive on the job training as well as a direct demonstration of how data can assist them. In general, the project will heighten the awareness of those involved with planning and policy formulation of the necessity and utility of basic agricultural data. The project anticipates a spin-off effect where other ministries working with the MOA will also become interested in improving their own analytic capabilities.

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This project should be/as a model for improving data use not only in agriculture but in other sectors and other countries as well. For example, the project is described as follows in the project paper:

"The proposed project will help the Ministry of Agriculture to overcome data collection and analysis problems that hinder rational decision-making in agricultural planning and policy formu-

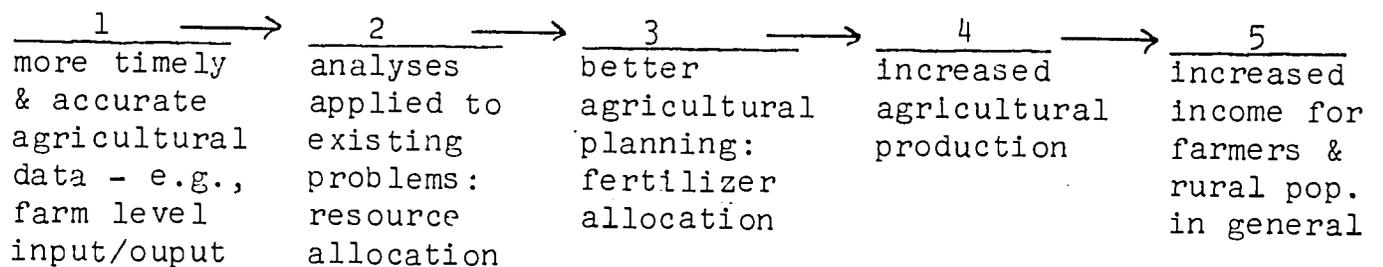
lation. This will be accomplished over a five year period through assistance to improve the collection, compilation and storage of basic agricultural data and to increase the amount of analytic work performed, as well as the use of such information in policy development and planning. In the area of agricultural statistics and data collection, improvement is to be achieved through the provision of short-term technical assistance on a regular basis, modest commodity inputs, considerable training and limited amounts of funding for special data collection activities." (1980:1)

This description could be used as a basic template; simply substitute the appropriate country name and sector. This is also true for the set of problems the project paper lists as affecting data use:

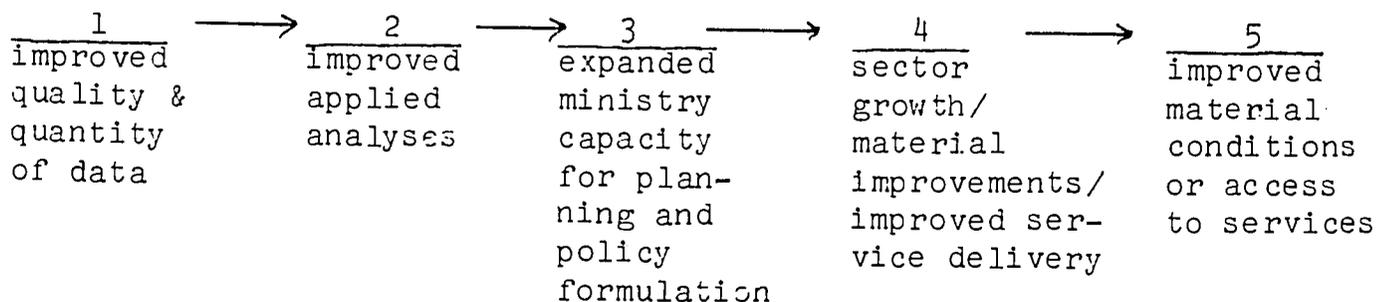
"...(1) insufficient economic data is being collected, analyzed and fed into the decision-making process; (2) the capacity to utilize whatever data and analyses are available is not sufficiently developed; and (3) links which integrate the research and analysis process into the decision-making process regarding resource allocation, are weak/missing." (1980:2-3)

These problems are not unique to the Ministry of Agriculture or to Egypt.

There are several basic features of this project which I think should be fundamental to similar projects attempted in other sectors or other countries. They are: 1) a rationale which links improved data use to specific beneficiary groups; 2) genuine ministry support; 3) sensitivity to the political concerns of the ministry; 4) project outputs targetted on problems the ministry confronts; and 5) a minimum of personnel changes. The basic rationale for the project is easily replicated. The argument as to how better data collection benefits the poor majority (hence fitting within USAID guidelines) is as follows:



Steps 1, 2 and 3 combined with the training component constitute the institution building portion of the project (in this case, the Ministry of Agriculture). Steps 4 and 5 are the beneficiary outputs that result from the project. This sequence can also be stated in more general terms:



A prerequisite for such projects will be some minimal support from top ministry officials. That support might not involve anything more than their acknowledgement that improving the analytic capacity and information base of the ministry is important and worthwhile. In situations where the nature of the data and the analysis touch on politically sensitive matters, a "go slow" approach is necessary. In this project, one goal is to provide policy options on a variety of topics. Producing them will be one thing; seeing action taken in response will be quite another. Obviously there is no quick and easy solution to the problem. Soft-peddalling the increased information use by gearing analyses to problems the ministry staff define as important will probably make most headway. The general idea is to build up a behavior pattern of using data to guide planning and policy decisions. This raises a fourth characteristic of such projects - the data collection and analysis must address existing problems or tasks to demonstrate to ministry officials and staff that better data use will assist in accomplishing their assignments. Finally, personnel changes on the technical assistance team should be kept to a minimum; ideally none should be made. This guarantees a certain degree^{of}/incontinuity between contacts with ministry staff and builds on whatever rapport is possible.

More variable characteristics of these projects include the size of the technical assistance team, the amount of time (i.e., work months) involved, the number of host country staff trained and the amount of training they will receive, the type and amount of equipment (e.g., computers), and outputs such as reports and special surveys. As a basis for comparison, the Egyptian project included:

- 1) 114 work months of TA with a team of five professionals knowledgeable about sampling, survey design, field operations for data collection, statistical analysis, automated data processing and data management. The team will be in the country twice a year for periods of three to six weeks;
- 2) training for thirty-five Egyptians with six specialized in agricultural policy research and fifteen trained in policy analysis techniques;
- 3) the purchase of a mini-computer and several vehicles; and
- 4) reports on possibly nine policy issues containing analyses, conclusions and options for policy review.

There is considerable flexibility in all of these elements. The amount of funds available, current ministry capabilities, computer hardware needs and other aspects of the particular situation will determine what is necessary and possible. The point of this discussion is to bring this project to the attention

of the Agency and encourage it to consider funding more such projects. They are relatively inexpensive and can be tailored to fit program budgets and ministry or sector needs. Equally as important, they create a capacity which aids future data collection efforts.

2.1.4 Coordination of Data Related Activities

As mentioned earlier, the Agricultural Resources Office seems to be making somewhat better progress than other offices in developing data bases and building the analytic capacity of the Ministry of Agriculture. Perhaps this is a reflection of the subject matter; that is, it is hard to imagine how agro-economic inputs can be made without the necessary data to guide ^{improvement of} them. In fact, data/is one/the inputs to be made. It might also be partially due to more responsive leadership in the upper levels of the ministry. It is not that problems do not exist or that the office makes overwhelming use of quantitative data itself - far from it. I am referring here to progress in establishing the potential for better data and analysis in the short term. As this occurs, one can only assume that the office itself will make better and greater use of such data than it now does.

The three projects discussed above offer a rough idea of this potential. Other major projects funded through this office also include data collection and analysis components. If the

data generated by Agricultural Mechanization, Major Cereals Improvement, Water Use and Management, Agricultural Development Systems, Poultry Production, Rice Research and Training, and Data Collection and Analysis were pooled, USAID and the Government of Egypt would be in a considerably better position to assess current conditions in the agriculture sector.

The office has begun efforts in this direction. According to the current office director, about a year and a half ago, it became apparent that various agricultural data were being collected, but that there was no central focus nor coordination among projects. Rather, data were being collected to meet the narrowly defined, specific needs of the project with no real consideration given to additional or larger issues. More or less commensurate with the growing interest in a sector approach to mission funding, the office decided to try to give a central focus to data collection so that sector assessments would be possible in the future.

There are several problems with attempting to do this after the start of projects. The data collection components were not initially designed to meet anything other than the immediate information needs of the projects. Consequently, it is difficult to make the projects and their analyses address larger sectoral issues. There is also no correspondence between site selection, samples and units of analysis which would be necessary for

physically pooling data sets in some legitimate fashion. Furthermore, assuming technical problems could be resolved, it is still difficult to coordinate data collection because projects start at different times.

In general, I think some of these difficulties should be regarded as teething problems that are inescapable at first. A start at imposing coordination has to be made somewhere if it is to happen at all. It will be difficult to do this with projects already underway, as the office has found out. However, if some central focus, such as a set of major agricultural issues, is maintained over time, it should become easier to develop better coordination of data related activities. Much farther down the line, as new projects are designed, thought can be given to how proposed data collection could be made compatible with available data, either updating it or adding to it. If (and this is a big "if") common site selection, sampling and units of analysis could be agreed upon, data sets, or just parts of them, from different projects might be merged to give a more comprehensive picture of agriculture in key regions. Project/needs will, of course, continue to dictate the primary content of data collection and analysis. But greater coordination is still possible especially if those information needs are broadened to include sector issues identified by the office or the Ministry of Agriculture as crucial.

2.2 Human Resources and Development Cooperation/Health

The contribution of quantitative data analysis to achieving project goals is highly dependent on the importance the host country attributes to these activities. Two health service delivery projects funded by USAID/Egypt - Improvement of Rural Health Delivery and Urban Health Delivery System - illustrate this point. Both projects involved extensive data collection. The effectiveness of the data related components of the projects was seriously undermined by the indifference of the Ministry of Health toward data use. Apparently, USAID and the projects' contractors attached more importance to improving information bases and analytic capacity in the health sector than the ministry did. This situation is not unique to the Ministry of Health. A number of mission staff reported similar difficulties in their dealings with ministry officials concerning data related matters. Nor is the problem of generating sufficient interest on the part of the host country in improving their data bases and analytic capabilities for more rational planning limited to Egypt.

2.2.1 Rural Health Delivery

USAID initially appropriated \$8.5 million for the Improvement of Rural Health Delivery. The project was designed to identify how access to preventive and curative health services could be broadened. It was known that the effectiveness of rural health

services were impeded by problems of communication between the central Health Ministry and its offices in the field, by low motivation and a lack of incentives for health workers; and by current management and supervision techniques. Alternative service delivery systems designed to overcome these constraints were to be field tested to determine which was most effective. The Ministry of Health would then replicate these new management and service delivery procedures throughout rural Egypt to improve its efficiency and productivity.

Approximately \$4 million were used for transportation (the purchase of Carryall vehicles) and vehicle service facilities, communication equipment, medical supplies, educational and instructional equipment, and environmental sanitation testing equipment. To develop MOH staff skills, training was planned for twenty-two separate divisions within the ministry. Much of the training focused on data related skills - sampling and survey techniques, analytical techniques for planning and evaluation, data management, etc. Some \$1.5 million were used for technical assistance because extensive evaluation of project inputs were necessary for the field testing of alternative service delivery systems.

The project was implemented in eight districts located in four different governorates. Sixty-two health centers and one hundred and fifty-five health units were included. Consultants

were used to assist in the design of the project with special attention given to methodological issues. Baseline data on health service productivity and efficiency were collected. Field tests were to determine what measurable impact on health delivery services could be attributed to: 1) different work patterns and tasks for rural health workers; 2) alternative procedures for generating greater village resident involvement in health programs and contact with facilities; 3) incentives (such as scholarships, awards, performance bonuses) to health workers to attract and retain qualified staff and encourage better job performance; and 4) transportation and communication improvements. The project was divided into three test periods with data collection scheduled at the end of each to evaluate the effects of interventions on service delivery. In other words, combined with the baseline data, four separate rounds of data collection were planned. Additional tests, such as determining how health units or centers could best combine infant nutritional status monitoring with family planning, immunization and nutritional information services were also proposed.

With the assistance of the contractor for the project, analyses were to be performed by the appropriate ministry units throughout the course of the project. The implementation of the project was phased so that findings from the initial rounds of data collection could be used to guide subsequent phases.

Unfortunately, despite all the careful planning, this was not the course the project followed. Data were collected, including much household survey data and a specific study of oral rehydration, but the analyses were not performed as had been planned. The project was plagued with computer hardware problems. A mini-computer was purchased for the project, but construction problems with the room where it was to be installed caused a major delay. There was some disagreement on the Egyptian side as to whether canned packages, such as SPSS or BIOMED, would be used or whether special programs should be written. Finally, there were problems with obtaining the correct disks (data storage devices) for the computer which further delayed the analysis. In the meantime, the project proceeded without the planned analysis.

After three years, in 1981 an evaluation of the project was conducted. The evaluation team recommended that three more years of funding be given to the project. It was also recommended that part of the analysis be done in the U.S. Though that detracted from the training function of the project, at least it started some analysis of the data that had been collected. The team further recommended that the project continue its medical interventions and that an evaluation officer with the necessary skills monitor the progress of the project. However, even after extending

funding for the project, it was still difficult to get the ministry to analyze the data. According to the present project manager (who was not involved with the first three years of the project), two ministry workers have been trained in the use of the computer. The first three years of data are just now being entered. A new head of the project has been appointed and there is an agreement that data will be analyzed, interpreted and reported on a six month schedule. Oral rehydration data have been analyzed, but that was done primarily by the contractor (one person) provided by Westinghouse Health Systems. In short, the project officer expressed the opinion that it seems that the Egyptians attribute little importance to the data collection and analysis portion of this project.

2.2.2 Urban Health Systems

The counterpart to the rural health project is the Urban Health Delivery System for which USAID has obligated \$25.3 million. The primary purpose of the project is to make health services more accessible and their delivery more effective and efficient to better meet the existing demand. Health, nutrition and family planning services were considered marginally functional particularly for low income groups. The project, therefore, focused on three sections of Greater Cairo - Helwan, South and West Cairo - with a total population of 1.7 million, two thirds

of whom (approximately 1.2 million) are low income residents. It was estimated that approximately 625,000 women and children under the age of five reside in the project area. A significant effort was made to upgrade and modify family planning and maternal child health programs to better serve these people.

Survey data assisted the design of the urban health project. The Experimental Center for Training and Operational Research (ECTOR) headed by Dr. Wafik Hasouna conducted a health survey to assess existing conditions of health services and users' needs in 1977. In 1978, ECTOR published "Perception and Utilization of Health Care Services in the Greater Cairo Area: A Preliminary Investigation" which identified major problems affecting the urban health system. The Institute of Medicine conducted a health and population study in 1978 which also provided useful information. In light of these findings, the project paper - which was a cooperative effort involving USAID's contractor (One America, Inc.), the Ministry of Health, and ECTOR - specified that the project would correct the following problems: 1) fragmented health services; 2) personnel distribution; 3) inadequate physical facilities; 4) low use of peripheral health care units; 5) poor management of health services; 6) low motivation of health workers and lack of practical training or experience; and 7) inadequate health outreach services.

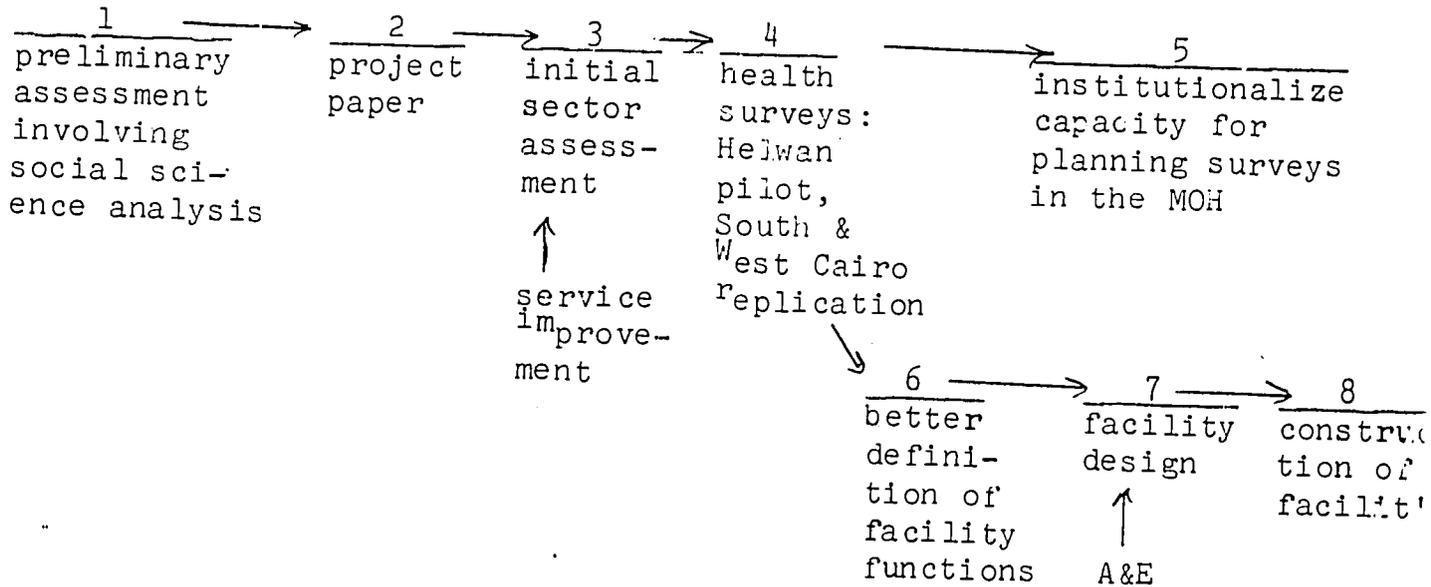
Like the rural health project, the urban health project involved considerable data collection and it would be used for similar purposes - evaluations and identification of service delivery improvements that could be replicated elsewhere. A baseline survey was conducted for a health sector assessment. For evaluation purposes, data were collected on health status, facility performance, training, community participation, project management and cost effectiveness (e.g., decrease of mortality rates per unit of expenditure). A major goal of the project was to increase the use of quantitative data by the MOH for planning. The authors of the project paper stated that a main element of the project was:

"(D)eveloping within the MOH the capability to perform on a continuing basis, assessments of the health sector designed to provide the data and information required to plan, implement and evaluate delivery services which are more relevant to the needs of consumers." (1975:5)

To date, data collection has proceeded and a preliminary analysis has been completed by ECTOR. However, according to the project evaluation team, no progress has been made in regard to institutionalizing data collection and analysis within the ministry. It is worth taking a closer look at how the data collection and

analysis component was supposed to have contributed to the project as compared to what actually occurred.

Schematically, the original plan was as follows:



ECTOR was responsible for steps 1, 3 and 4 which according to those knowledgeable about the project, it performed competently and professionally. ECTOR was also responsible for institutionalizing greater data use within the ministry (step 5) which has not occurred as planned. ECTOR is a semi-autonomous organization not entirely independent of the Ministry of Health (apparently this type of semi-private, semi-public sector arrangement is common in Egypt). This gives ECTOR close ties with the ministry. Furthermore, the head of ECTOR, Dr. Hasouna, has easy access to top ministry officials. By providing the ministry with convincing demonstrations of how better data and analysis contributed to improving

the urban health delivery system, it was thought that ECTOR and Dr. Hasouna could influence or encourage institutionalization of improved data use for planning and evaluation in the MOH. According to the evaluation team, that did not occur primarily because of the ministry's singular disinterest in this part of the project. One individual on the team thought that the MOH's approach to the project was to move from step 2 - the project paper - directly to steps 6, 7 and 8. In other words, their real interest was in the construction of more buildings. If they had to tolerate data collection to get them, so be it; but do not expect too much enthusiasm or involvement. Such a view would effectively eliminate whatever utility the data collection and analysis component of the project was to have had. It appears that the data were collected more because of USAID rather than Ministry of Health interests.

On the basis of the limited information available to me, it is extremely difficult to determine whether the data related components of the rural and urban health projects suffered because of initial design flaws. It does appear that expectations concerning MOH involvement with data use in both projects might have been overly optimistic given the ministry's demonstrated lack of interest. On the other hand, one individual knowledgeable about the urban health project remarked that there is nothing

surprising about the failure to institutionalize greater data use in the ministry because no one really expected that to happen in the first place. Given the concern expressed by those working on the evaluation of the project, they obviously expected this to have occurred. But accepting the alternative view that no one believed that the ministry would support and adopt improved quantitatively based planning techniques, what then was the purpose of citing precisely this point as the first major element of the project, as the project paper did? The question is whether the project planners were operating in good faith about improving the ministries capacity for data use. Was the assertion made that the analytic capacity of the MOH would be improved because that was honestly considered to be feasible or because it simply looked appropriate for a project of this sort to promise to institutionalize better data use?

The final evaluations of these projects should examine whether or not the goal of institutionalizing better data use was attainable. This problem also gives rise to a host of concerns about USAID's motivation for funding data collection and attempts to build the analytic capacity of LDCs. For example, the data collected by ECTOR for the urban health project was considered by one individual who had reviewed the initial draft report of survey findings, to contain very interesting and important information. But interesting and important do not necessarily equate

with useful especially if the Ministry of Health is not inclined to use the findings or continue on its own to collect and analyze such data. Obviously the Agency cannot afford to fund data collection because this is "a good thing" which produces information which might ultimately be useful for some purpose or another. Nor should USAID fund data collection and analysis which is little more than an empty attachment included because it looks appealing to Washington, helps obtain funds or justifies expenditures. Rather, USAID should fund data use when these activities genuinely contribute to achieving project goals. The Agency also needs to guarantee that data collection and analysis activities are institutionalized when such is asserted in project papers as being of high importance. Clearly the Agency must be able to recognize valid data use and distinguish that from more dubious applications. It is uncertain whether USAID currently gives this issue sufficient attention or even has the capacity to do so. For some projects, the legitimacy of data use is obvious, but that is not the case for other projects. USAID should consider requiring a concise justification for data collection and analysis in project proposals when data use is planned. The Agency and, in particular, PPC in cooperation with S&T/DIU, should provide clear guidance to project designers to help them determine when data use would assist in accomplishing project goals.

The rural and urban health projects indicate that better project management of data collection and analysis is needed. One USAID staffer observed that data use in the rural health project degenerated as badly as it did largely because of USAID's own mismanagement. From hindsight, it is easy to say that alternative solutions should have been found when serious computer problems arose. At the time, perhaps this was not so obvious, but not obvious to whom is the issue. For example, the current rural health project manager admitted he does not have a technical understanding of data collection or analysis. But he recognizes the importance of getting the analysis moving and of holding to the six month schedule of reports for this project. I think this is representative of many USAID mission staff - they are experienced managers but have little training or direct experience with data related activities. Consequently, when problems arise, it is difficult for them to assess their importance and decide what action should be taken. USAID needs to develop its in-house capacity for providing project managers with technical support for data related activities. A technical support person, such as a qualified project evaluation officer, should monitor the data component of the project, anticipate or identify problems and help resolve them. If USAID/Egypt had had such a capacity, perhaps the problems the rural health project encountered could have been made less severe.

Both projects attempted to build the Ministry of Health's capacity to use data more effectively for better planning. As mentioned earlier, the standard project formula for this process consists of 1) data collection and analysis to develop the current information base of the ministry; 2) training, both in-country and abroad, of ministry personnel to perform these tasks; and 3) perhaps most important, a demonstration to ministry officials of how data and analysis can contribute to more efficient and effective performance of ministry responsibilities. Experience indicates that simply developing data bases and information systems is no guarantee that the ministry will support and maintain it. Sometimes the transplant takes/^{root}and sometimes it does not. The rural and urban health projects suggest that the determining factor is the ministry's receptivity.

When USAID funds such institution building, it is oftentimes trying to generate a demand (or reinforce a weak one that exists) within the ministry for data to produce more rational planning of limited resources.¹ At first that demand might be totally external to the ministry, coming solely from international donors. Developing that demand within the ministry requires a behavioral and organization change where data and analysis are introduced

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This discussion draws heavily on the comments of Dr. Eugene Boostrom in USAID/Egypt.

or forwarded in the decision-making process. Before that change occurs, it must be abundantly clear that greater data use will facilitate and not handicap the operations of the ministry. Focusing analysis and interpretation on the needs of decision-makers and presenting the findings in a form they will readily understand and be able to use is essential. That never seems to have happened in either health project. When these efforts are successful, institutionalization of greater data use is a final output of the project. To say that the statistical/analytic capacity will be institutionalized during the course of the project jumbles the sequence of events.

USAID could better reinforce the demand for and the use of appropriate information by making clear its own position regarding the importance of data collection and analysis. For example, in the rural health project, data were not analyzed as planned. Even after extending project funding for three more years, the analyses were still not forthcoming. I am not suggesting that the funding should not have been extended as a result; far from it. Rather, the message concerning the importance USAID placed on the analysis was ambiguous - does the Agency view the analysis as an integral and important part of the project or not? After all, the project received funding despite the lack of analysis. This would only support the low priority the ministry staff

attached to the analysis. Coping with the problem after the fact is a difficult situation no matter how it is approached. USAID should make it clear at the outset that it values the data component of the project. It could stipulate that barring exceptional circumstances beyond anyone's control, if analysis as planned is not performed, then continuation of funding cannot be negotiated.

2.3 The Amount and Diversity of Data Generated by Current Projects: Implications for Meeting USAID/Egypt's Information Needs

A constant factor in describing USAID/Egypt's present use or involvement with quantitative data is the scale of the mission's operations. That includes its annual budget, staff size, the number of projects funded and the amount of funds obligated to individual projects. To this list should be added the amount and diversity of data currently being generated by USAID projects. In addition to the agriculture and health projects, a number of other projects also involve data collection and analysis. To better appreciate the range of data being collected, several of these will be briefly described.

The number of active projects has direct implications for the mission's own information needs. The most obvious is that the mission's information needs is proportional to the diversity of its program. To better meet those needs and to more fully

utilize project data, greater coordination of data related activities within offices and more cooperation and sharing of information among offices will be necessary. Clearly some mechanism is needed to accomplish this. There is little thought given by the Agency to the question of how missions can better meet their individual information needs. It cannot be assumed that each mission will do so on its own. In the case of USAID/Egypt, it is difficult enough to coordinate projects within the same office which have overlapping information needs, let alone attempt to coordinate these activities among offices. USAID/Washington should consider how it can help the missions in this effort.

2.3.1 The Industrial Sector

Egypt's recent economic growth has been heavily supported by exogenous factors - Suez Canal fees, remittances from abroad, petroleum exports and a construction boom financed by foreign investment. As beneficial as this has been, Egypt needs to develop more self-sustained sources of economic growth less subject to political and economic vagaries over which it has little control. This is especially important given that Egypt's labor force is increasing yearly by approximately three percent. Current conditions both in Egypt and abroad are absorbing much of this growth;

begin to return to Egypt and the female work force increases as anticipated, alternative sources of employment will be needed. Therefore, consistent with Egypt's interest in industrialization, USAID/Egypt's industrial sector strategy strongly supports increasing the efficiency and productivity of public and private sector industries. Special attention will be given to expanding private sector industry. Policy changes which reduce discrimination against private sector firms is an important element in USAID's strategy. These changes are expected to stimulate growth in the private sector - thereby creating new sources of employment - and increase the productivity of public sector industry. However, according to the FY84 CDSS Annex "Industry Sector Strategy for A.I.D.", significant gaps in knowledge make it difficult to suggest specific strategies or policy changes:

"We do not know, for example, despite the seeming logic of an export orientation, just how realistic this is in terms of actual markets. In part this reflects our incomplete knowledge of where Egypt's comparative advantages lie. The effects of changes in factor prices are also not known. Another area of incomplete knowledge is where the best investments lie in terms of labor intensity." (1982:24-25)

The Office of Industry and Technology (IT) is particularly interested in obtaining better information about production credit and investment promotion. Some macro-economic data are available from the Ministry of Planning, the Ministry of Industry and CAPMAS. More micro-level data is needed by IT/Financial Trade and IT/Industrial Resources to develop projects specifically to assist private sector industries. Financial Trade, for example, supported a survey of the local banking system to determine what credit was available to private manufacturers. A more rigorous analysis of the banking sector is planned. The division also needs more detailed information about real interest rates; that is, what downpayment, fees and interest do private sector borrowers actually pay. They also need to determine what effect reducing exchange rate and interest rate subsidies would have on the Egyptian economy. A comparative analysis of interest rates is also needed; that is, are interest rates in Egypt comparable to those that prevail in other countries which are at a similar level of economic development? In short, the office will generate an expanding body of information on local credit and investment opportunities that could be of use to other parts of the mission.

HRDC/Science and Technology is funding a project focusing on increasing the efficiency and productivity of the industrial sector. The project addresses three main factors affecting industrial productivity - managerial skills, available technology

and worker vocational skills. Managerial development and improved application of industrial technology are expected to increase manufacturing productivity. The project will assist individual firms; primary inputs will include training, the improvement of existing equipment and the provision of information about new technology. A baseline survey will be conducted to measure current levels of productivity within the firms. Data will be later collected for project evaluations which will determine whether and to what degree increases in productivity have resulted from project inputs.

2.3.2 Basic Education, Urban Housing and Basic Village Services

HRDC/ Education and Training is funding a Basic Education Project which will make use of available data from the Ministry of Education. The goal of the project is to increase the access to the educational system particularly for girls. Different interventions will be developed after determining which factors are associated with greater school enrollment of girls. Project interventions will be evaluated in terms of which were most effective in improving and expanding educational services. At this point, the data base is still being developed from the yearly records of the Ministry of Education. The ministry has recently produced a set of maps showing the location of schools within communities for sixty markaz in five different governorates. As simple as

mapping sounds, the information the maps provide has helped the ministry to better understand existing problems and will assist their planning efforts. Much farther into the project, more detailed analysis pertaining to specific problems will be done for the ministry. The project will also attempt to better integrate the Planning Unit and Statistics Office within the ministry and develop a project management system to monitor expenditures.

The Development Resources and Program Support Office (DRPS) is funding two projects which involve data collection and analysis. The Helwan New Community Project is being managed by DRPS/Urban Administration and Development. The project will sponsor construction of a new community. Vacant land will be subdivided into some 7,200 plots and housing will be constructed for an initial population of 35,000 growing to 110,000 by the completion of the project. A second component of the project concerns improving substandard housing in the area. Both physical and social conditions will be upgraded. Financial and marketing data will be collected for the first part of the project. For example, estimates of income distribution will be used to target housing construction for different categories of potential buyers. Six ^{communities} substandard/will be included in the project. Economic and social analyses of demographic, income, employment, family structure and social organization data will be incorporated into plans for

community improvements. A mini-computer has been purchased and is being used to store and retrieve information on joint housing projects by the Ministry of Housing. The project officer reported that thus far, no problems have been encountered either with the computer or the data collection.

DRPS/Local Administration and Development manages one of USAID/Egypt's larger projects - Basic Village Services. USAID has obligated \$70 million for the project which is supplemented by \$75 million in Title III funds. The project will assist the Egyptian government to implement its policy of economic and administrative decentralization. The primary goal of the project is to improve the capacity of local government units at the governorate, markaz and village council levels to plan, organize, finance, implement and maintain small scale infrastructure projects. Particular attention will be given to public facilities which serve basic human needs, such as water systems, roads, drainage systems and canals. The project will provide local governments with funds enabling them to undertake projects which they have identified as important. Project funds will facilitate the completion of projects targetting on those beneficial to the rural poor. Because project planning will better reflect local needs and interests, it is thought that development efforts will be more effective and project outputs better maintained. In addition

to improving basic services in rural communities, the project will give decision-makers at various levels of government experience in allocating and utilizing resources for local development. This will reduce their reliance on central government agencies to provide the initiative and assistance for undertaking local development projects. In turn this will reduce the oversight functions now required of the central government.

Data requirements for project monitoring and evaluation will be substantial. Coordination will be provided by the BVS Interagency Committee composed of GOE ministry representatives headed by the Organization for Reconstruction and Development of the Egyptian Village (ORDEV). The project will affect some 450 villages in nine governorates. Approximately 1000 sub-projects are expected to be funded through BVS. ORDEV does not have the capacity to monitor and evaluate all of these sub-projects; it will be hard pressed to even fulfill its primary task of coordination. Pre-project investigations identified significant planning and implementation limitations at the local government level:

- "a) lack of adequate planning skills at the village council, markaz and governorate level...
- b) Sub-projects are not systematically subjected to cost benefit analyses, environmental analyses

and other selected approval criteria...

c) Mis-estimation(over and under) of sub-project costs...

d) The absence of effective management and administration systems and operating guidelines..."(1980:8)

In addition to inadequate analytic skills, it is reasonable to assume that the flow of information between levels of government will be problematic. The project plans to address these problems in part through BVS staff training at the governorate, markaz and village levels and by developing a series of operating manuals which local administrators can use for planning guidance.

Data collection for BVS is rather innovative in several ways. The project will employ the staff of local government offices to do much of the actual data collection from existing records. There is substantial manpower in these offices though they are extremely underpaid and under-utilized. Many are well educated and with the proper leadership and motivation, it is believed that they could perform quite adequately. BVS will train personnel to record data and technical assistance will be provided to computerize the data as well as develop applied analyses for local government. Unlike most other socio-economic data collection efforts, BVS will focus on the community as the unit of analysis. Data on basic facilities, public services, occupational

composition and demographic characteristics of the community will be collected. This will be supplemented by financial management data to develop a rural information system for project monitoring and evaluation purposes. The contractor working on this part of the project plans to use contextual variables - i.e., community attributes - to evaluate project impact. For example, it could be useful to know which community attributes are associated with how well canals are maintained after improvements are made. The system will also be used to supply local government officials with information pertinent to the planning. For example, they could benefit from information about projects other communities have undertaken which are similar to ones they are planning. At a higher administration level, an information system of this sort could monitor local problems to help identify potential BVS projects. Those knowledgeable about the project expressed the opinion that local administrators could use such information effectively (perhaps after some initial assistance) because many are well educated professionals. If the rural information system envisioned for BVS is successful, it could serve as a model for other integrated rural development projects with comparable data needs.

2.3.4 Coordinating Data Use within USAID/Egypt

The present scale of mission operations implies that the size and diversity of the program creates substantial information needs. The mission's information needs can be divided according to organizational structure - at the project level, the office or sector level and the program or mission level. Though the specific information needs vary across levels, in general, the information is evaluation oriented (i.e., is the project on schedule and having the intended impact; are sectoral goals being achieved; and are program objectives being reached) and planning oriented (i.e., what changes, additions, etc are required). Ideally, most of these needs should be met by the data and analyses produced by the mission's various projects. There should also be a flow and pooling of information from project to office to mission levels and vice versa.

Certainly the amount and diversity of data and analysis being generated by mission activities are considerable. The projects cited in this report are only a portion of the total number which involve data collection and analysis. The actual array of data and information being produced is even broader than what has been suggested here. Whether the mission's various information needs will or will not be adequately met, however, remains to be seen. It is also questionable whether data collection

and analysis designed to meet relatively narrow information needs of individual projects will also meet office, sector and program information needs as well. USAID/Egypt staff made it abundantly clear at all levels that at present, obtaining and finding time to use necessary data is difficult. Some of the reasons for this have been mentioned (e.g., available data is not timely, the ministry is reluctant to release data, data quality is low, workload does not permit adequate data use, etc.) Two additional constraints are 1) the limited capacity of the mission to manage and use quantitative data effectively and 2) the lack of attention given to maximizing the total potential of data collected through projects.

The limited capacity of the mission to manage and use quantitative data is a reflection of the training and experience of USAID staff. As mentioned earlier, analytic skills are miniscule in comparison to managerial skills. I would suspect many would be hard pressed to evaluate the methods used for data collection and analysis in the very projects they are managing. Analytic skills are simply a set of tools that many USAID staffers are unfamiliar with and, in some cases, view with antipathy. But even for those who do have these skills, actually using data for any task requires exceptional effort. First, work time must be found. Next, obtaining the necessary data will require

additional time (and that assumes the data will be in a usable form with adequate accompanying documentation) because the Agency does not routinely acquire copies of data its projects produce.

In USAID/Egypt, aside from the DIU system, the mission's information storage and retrieval system (which is stretching the term to extremes) consists of the printed project documents, reports but could include computerized data as well. and so forth/ Finally, despite a \$300,000 computer system, there are no readily usable packages available to mission staff or their contractors for data processing (and that includes even the simplest of tasks, e.g., lists, rankings, crosstabs, etc.) The bottom line is that unless project reports contain precisely the information the mission requires, there is minimal/virtually no in-house capacity to produce what is needed from available data.

The coordination of data related activities is another very problematic issue. The question here is not so much whether mission needs will be met, but rather whether the full potential of data collected and analyzed will be realized. For example, in the Helwan New Community Project, the project manager reported that even though the contracts for planning the improvements of the substandard communities contained the same terms of reference, there is no assurance that the same or comparable data will be collected in each community (there is a separate contract for each community). In other words, the project might

produce six separate data sets that cannot logically be merged. That may or may not be problematic depending on the needs of the project, but it does limit the utility of data collection. For example, it certainly complicates an evaluation of the comparable effectiveness of the project in the different communities.

Coordination between projects seems to occur even less frequently. For example, even though Westinghouse Health Systems was the contractor for both the rural and urban health projects, there were no plans to try to coordinate data collection and analysis so that the effectiveness of health delivery systems in rural and urban area could be compared. Apparently no thought was given to how the projects could be coordinated to give a better picture of the health sector until the projects were well underway. As described earlier, the same situation existed in the Agricultural Resources Office until action was taken recently. For some large, eclectic offices, such as HRDC, it is hard to imagine how or why a basic education project, for example, should be coordinated with health delivery services. But even where such coordination makes sense, there is little attention given to the matter at the planning stage where it is needed.

The sheer number of projects USAID/Egypt funds would suggest that the information needs of some projects and some offices would overlap on certain issues. Production data collected for

an agriculture project, for example, should be useful to a nutrition project operating in the same area. It would be important to know if local production will meet daily caloric and nutritional requirements. This is precisely the situation of the BVS project in regard to a number of other USAID projects. If BVS plans to improve irrigation canals, it would be useful to coordinate its effort and information needs with the Water Use and Management Project. If BVS plans to improve sanitation and health conditions, then it could use information from the Rural Health Project. The BVS project paper acknowledges this convergence of data needs, but there is no means or mechanism which guarantees that it will happen.

As difficult as it is to coordinate data related activities within offices where project coordination seems most feasible, it will be even harder to coordinate these activities among different offices. This is especially true of USAID/Egypt, again, due to the scale of operations. Separate offices and even divisions within offices have budgets larger than the annual expenditures of other entire missions. The result is that USAID/Egypt resembles in many ways a collection of individual missions rather than a unified body. It is precisely the "missions within a mission" structure of USAID/Egypt which militates against better coordination of data use and exchange of information.

The Policy Analysis and Development Division (PAAD) in the Office of Development Policy/Planning and Evaluation (DPPE) has taken a fundamental step toward improving the flow of information within the mission. PAAD periodically issues Research Briefs on projects which involve data collection and analysis. The research brief summarizes the objectives of the project, the data base and the major findings of the study. In many cases a copy of the questionnaire used is available through the office or the project manager. PAAD also circulates research memos and sponsors seminars and conferences which present recent study findings. These activities help the mission stay abreast of new information and inform USAID staff as to what data might be available to them from offices other than their own. This service might lead to inter-office cooperation, but attention should also be shifted to the beginning of the project cycle. A first step here might be an announcement of proposed data collection circulated at the PID stage. It could be similar in content to the Research Brief, listing topics to be investigated rather than actual findings.

Coordinating data use between projects and offices involves both methodological issues - e.g., sampling designs, units of analysis, etc. - and management concerns - e.g., what office has the time and skilled staff to provide the necessary oversight. DPPE/PAAD would seem the obvious location in USAID/Egypt since

they have already taken the initiative. The staff assigned to the task would have to have multi-disciplinary interests and competencies as well as general quantitative, analytic skills. The benefits of coordinating data use would result in two ways. Pooling resources could produce better quality and/or more comprehensive data sets and analyses while eliminating redundancies between projects would reduce overall costs. Admittedly, all of this is much easier said than done. Nonetheless, to capitalize on the total potential utility of data collected by projects, greater efforts at coordination and a more global view of data use to meet all levels of information needs in the mission will be necessary.

2.4 Program Level Data Use

2.4.1 Current Needs for and Uses of Quantitative Data

The CDSSs for Egypt offer a fair indication of the mission's general situation in regard to access and use of quantitative data. Recent CDSSs are substantial documents consisting of the main strategy statement supported by more than a dozen annexes.¹ As would be expected, the annexes are primarily strategy oriented reports which focus on macro-economic issues pertaining to USAID/Egypt's continuing dialogue with the Government of Egypt concerning the need for policy changes.

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These comments are based on the FY83 CDSS only; the FY84 CDSS is still classified though the annexes accompanying it are not.

Data for the annexes were obtained from GOE ministries and in particular, from CAPMAS; other international agencies (World Bank, ILO, IMF); USAID contractors (e.g., Boston University's Industrialization Strategy Project, PADCO); conference reports and other local sources (e.g., the Middle East Advisor Group - MEAG - published a periodic survey containing salary, total earnings and total compensation for 110 different occupations). Their use of data is fairly straightforward and certainly does not go beyond the limits of the data. For example, the FY84 CDSS Annex "Benefits of Growth" calculated weighted and unweighted annual growth rates in earnings for forty-four private sector occupations using data obtained from MEAG reports. The "Employment Policy and Strategy" annex includes projections of potential employment shortfalls based on three different demand and supply conditions in the Egyptian labor market. Data were obtained from the Annual Labor Force Sample Survey and other government sources. For the most part data use is descriptive of current conditions and trends.

In comparison to other missions, USAID/Egypt appears to be somewhat better off in terms of the availability of economic data. This reflects the fact that the Egyptian government is neither short of human resources for data collection nor unsophisticated about the possible importance of data. In comparison to some

missions, such as the Philippines, USAID/Egypt is far from "data rich". For example, the FY83 CDSS states:

"Recent social performance is difficult to assess with any great degree of accuracy due in part to the lack of available social indices since 1975." (1981:25)

and

"While the macro-economic and sectoral analysis available to us has continued to improve over the past year, and the GOE has also improved its sense of priorities, the quantitative basis for assessing appropriate priorities for detailed sectoral assistance allocations is still limited. Similarly, the various sectoral assistance being carried out in Egypt do not, as yet, in most instances, provide a quantitative basis for assessing assistance needs in terms of sectoral development potentials." (1981:70)

In other words, the data bases which USAID/Egypt must use are of uneven quality and quantity and degenerate as the issues or sectors in question become more socio-economic as opposed to purely macro-economic in nature. The Manpower and Employment annex for the FY84 CDSS points out that there is considerable uncertainty about the size of the female work force in agriculture.

One implication of this is that it is very difficult to determine whether USAID projects have increased or decreased the number of female farm workers. The annex also discusses the problem of using labor force and employment data from the Population Census and from the Labor Force Sample Survey. Estimates from the two sources are not comparable because of different age groupings, different treatment of conscripts as part of the labor force, and even the different times of year when data were collected (which would affect unemployment estimates). In short, there is considerable room for improving the data sources the mission must use for program and strategy formulation.

Access to available data, however, is not a major problem according to some staff in the Office of Development Policy/ Planning and Evaluation (DPPE). The office relies heavily on GOE ministries for necessary data. One of its primary sources is CAPMAS which functions like a central clearinghouse for much GOE data. An inventory of current holdings lists sixteen statistical publications plus budget and banking reports. About half of these are current (i.e., data for 1980). Some staff in other parts of the mission have had difficulty obtaining data from CAPMAS and have turned to other government sources instead. DPPE staff reported much less difficulty especially since the appointment of a new head to CAPMAS who is more willing to release data than

was his predecessor. Another contributing factor is that DPPE/Policy Analysis and Development Division (PAAD) has developed a very good working relationship with CAPMAS and other GOE ministries. Data use is made as cooperative an enterprise as possible. One economist in PAAD explained that the staff was careful not to constantly request data from the ministries without offering something in return. When the office acquires useful information, they make a point of passing a copy along to the appropriate ministry. They also try to make their own products as usable to the GOE ministries as possible. The cooperative approach they have followed has probably increased their access to data that they might not have otherwise obtained.

There is some question about the capacity of CAPMAS to collect reasonably good data. Some think that CAPMAS is capable of fairly sophisticated surveys. Others report that middle level staff in CAPMAS lack the necessary skills for data collection and particularly for analysis. They also think that motivation and leadership required for producing reasonably good quality data is lacking. I cannot say which view is more or less correct, but one individual in PAAD made a very telling observation which probably applies to other GOE agencies as well. It was this person's opinion that the quality of data CAPMAS collects is largely a function of how interested it is in the data. CAPMAS tends to

be more interested in head counts than surveys because they consider census-like data more useful for determining whether government services are reaching those entitled to them.

There was no difference of opinion that the quality of ^{data} must be improved before the analytic work for USAID and GOE planning can be improved. For example, DPPE/PAAD needs better data on a range of macro-economic issues to continue and expand its policy dialogue with GOE ministry officials. The division attempts to quantify problems confronting the Egyptians and then show them possible solutions. Current analyses include: 1) the effect of increased energy use in rural Egypt on final costs to consumers; 2) the effects of commodity price increases on inflation rates by income class; and 3) rates of return to the Egyptian economy resulting from raising commodity prices closer to world market levels. (This last topic is being done using an Apple microcomputer and a programmer obtained from the Futures Group). Improving the validity, reliability and timeliness of data for economic modelling is a very important concern for the division. In addition to better quality data, improved analysis will also required more skilled staff and a senior management which appreciates the importance of analysis.

The DPPE/PAAD staff made several other observations about improving or expanding data use by the mission. The overriding

political concerns influencing USAID/Egypt's activities were mentioned at the beginning of this section. These concerns affect data collection in so far as the purely development impact of USAID projects in Egypt must be accommodated to the foreign objectives of the U.S. Viewed in this context, some staff question aspects of the need and utility of greater data use in the mission. Until recently the mission's program focused primarily on problems where massive amounts of money could be spent, producing a very visible display of the U.S. presence in Egypt. Though these activities were conducted according to USAID guidelines, the mission now finds itself in the position of devising rationalizations for its actions in development, as opposed to political, terms. Some question where precisely would greater data use fit into this process. Projects have generated much data, but there is uncertainty as to whether it has been used effectively. The Agency needs to consider its motivation for data collection/Will data be collected, analyzed and used to assist decision-making? Will data be collected because of the mutual interests shared by the GOE and USAID or is it collected to meet the needs of the mission alone or the demands of a Washington office? An even more fundamental question is given the political realities of USAID's presence in Egypt, what decisions in the Egyptian Government will be actually made because of more or better data?

The pros and cons of these questions could be discussed ad infinitum. Obviously it is a waste of time to collect and analyze data simply because it looks appropriate to an outside audience. It is equally as pointless and wasteful to collect more data or go to great pains to improve the quality of data simply to placate the narrow demands of an AID/Washington office. However, because political factors heavily influence development decisions is no reason to sit back complacently with the idea in mind that the development impact of projects is ultimately of little consequence to the course of events. I will give only one good reason here why it would behoove the mission to be able to demonstrate empirically its effectiveness. The next time Senator X decides to attack foreign aid appropriations, it would not take someone who saw as many different parts of the mission as I did to suggest that USAID/Egypt should be held up as an example. Suppose that the good senator hired auditors and research methodologists sympathetic to his cause. I suspect that they could take the mission to ^{task} / on the criteria of cost effectiveness and development impact alone. At the very least, after the current deluge of funds ends and all the new canals are stuffed full of dead donkey carcasses and burned-out Mercedes Benz chassis, USAID should have left behind from all the hundreds of millions spent in Egypt the capacity to use information effectively for rational planning. None of the questions posed above are trivial.

The Agency needs to consider them carefully before demanding more or better data use from the missions.

2.4.2 The Implications of Sectoral Funding for Data Use

A number of USAID/Egypt staff advocate shifting the focus of mission activities and funding from its current project by project basis to a sectoral approach. The purpose of this change is to improve the effectiveness of management over the mission's program. A sectoral approach to funding will lessen the mission's present heavy involvement with project implementation, which some think consumes a disproportionate amount of staff time, by shifting the responsibility to Egyptians. Sector funding has been obtained for Decentralization Support and this approach might also be applied to other sectors in the future. Though this change is essentially directed to the management of the mission, if it is more widely implemented, sector funding will have a significant effect on the mission's need for and use of quantitative data. In particular, periodic sectoral assessments will be indispensable to USAID management for monitoring and evaluating USAID/Egypt's program.

In "A Report on Implementation Management" prepared by Richard Seifman for USAID/Egypt, it is pointed out that a sectoral approach will re-define what kinds of information and reports will be useful and necessary for senior management. In terms of data

related issues, a significant change will be greater emphasis placed on quantifiable objectives. Similar to health and population targets that have already been established, Seifman writes:

"In energy, a target might be identified based on the proportion of consumers utilizing less than one kilowatt per month, increased kerosene sales, or sales of small butane stoves; in industry, the percentage of industrial production jobs or investment in the private sector compared to the public sector might be an indicator" (1981:14)

The selection of indicators will be very important in part because USAID has little direct influence over changes in some areas.

Nonetheless, Seifman points out that:

"...if we took those sectors where we direct most of our resources and have policy objectives and looked at appropriate indicators, it would give a better picture of what is happening in development terms." (ibid.)

In part, the viability of this approach depends on the availability and the quality of data which would be needed for sectoral assessments. This point was made by the authors of a document prepared for the Decentralization Support Fund:

"...despite the fact that project agreements often call for development of the baseline data and analysis necessary to advance development of larger sector-related policies and procedures, such efforts consistently take a back seat to other more immediate pressing demands. Regrettably, they are often treated by GOE counterparts and contractors as peripheral to or ranging beyond the practical limits and prime purposes of the discreet project with which they are working... As a result there is still a paucity of accessible contemporary baseline data and analysis ... (needed) to judge progress toward the central development goals in decentralization."

The authors note that this dearth of necessary information would impede the measurement of progress in the sector and would obscure a better understanding of major sectoral issues. The solution is to develop specifically those data bases which were most important. Using Decentralization as the example, ongoing and planned data collection analysis efforts will be reviewed and :

"...limited but long-term sector-wide coordinated technical assistance to be funded through the Decentralization Planning and

Management activity (will) coordinate existing efforts, program additional requirements and establish an overall sector data management system that feeds results back into the portfolio and is carefully linked to national data systems..."

If this action is indicative of what would be required in other sectors, which I suspect it is, then sector funding will entail a substantial increase in the amount of attention paid to data collection and analysis throughout the mission.

Sectoral funding for Decentralization Support is a recent development and we will have to wait to see whether data requirements are met as envisioned. So far the sectoral approach has only been approved for decentralization; AID/Washington has resisted mission-wide application. If those who hold this view alter their position and approval is obtained, it will be interesting to see how the mission copes with the increased need for data and analysis. I certainly wish them well, but I can anticipate any number of problems ranging from data quality to coordinating projects so that they produce information needed for sectoral assessments. One that deserves special attention is the limited training and experience of current mission staff in data related activities. (not to mention the outright rejection of data use by some). Quantitative , analytic thinking will be

at a premium; Seifman states:

"The functional Assistant Directors (AGR, DRPS, IT and HRDC), taking guidance from the Director and Washington, would define sectoral objectives as well as strategies to meet objectives." (1981:15)

Bear in mind that these objectives will be quantified and the strategies must include a plan of action for demonstrating progress toward those objectives. Further he writes that "Office Directors will be expected to see their allocation tasks beyond the confines of a particular discipline or specialty." (1981:16) In other words, they will have to have multi-disciplinary competency. Perhaps I underestimate the USAID/Egypt staff or over-estimate the level of skills required to perform adequately under the sectoral approach. But it appears that Washington should be prepared to provide far more technical assistance to the missions than it currently does if sector funding is to be instituted.

2.5 Summary of Main Points

The major points concerning USAID/Egypt's current involvement with and use of quantitative data are as follows:

- 1.) The overriding foreign policy objectives of the United States Government in Egypt guarantees funding for data related activities yet lessens the potential input of data use to project activities.

- 2.) The amount and diversity of data being generated by USAID/Egypt's current projects is substantial. Projects funded through AGR, HRDC, DRPS and IT should produce a wealth of information on numerous aspects of Egypt's social and economic development. Success in meeting plans for data related activities will vary substantially. An important factor is the performance of contractors working on these projects. Job performance varies considerably, not only among contracting firms, but also among different projects involving the same firm.
- 3.) A key factor affecting data related activities is the limited capacity of GOE ministries to collect and analyze data. This capacity seems to be weakest in the human services ministries. In general there is no established tradition of using data for decision making. Some ministry officials are disinclined if not antipathetic toward greater data use for planning.
- 4.) Efforts are being made to expand the capacity of the GOE to collect data and perform analyses for more rational planning. A noteworthy example is the Data Collection and Analysis Project funded through AGR.
- 5.) Special attention needs to be given to coordinating data activities at least within offices if not among them. AGR has taken steps in this direction, but a more concerted effort throughout the mission is needed to better capitalize on the total po-

tential of data collected by projects and to better meet all levels of information needs in the mission.

6.) USAID/Egypt has relative good access to available data at present. However, the quality and comprehensiveness of data obtained from the GOE varies and degenerates as the issues or sectors in question become more socio-economic as opposed to purely macro-economic in nature. DPPE is currently engaged with analyses which will contribute to on-going policy discussions with the Egyptians.

7.) The implications for data requirements to support sectoral funding of USAID/Egypt's program should be carefully considered and fully appreciated before decisions are made to expand this type of funding.

III. Issues Common to USAID Missions

There are a number of issues pertaining to data use by/USAID these two missions which are relevant to the Agency as a whole. Some of these have been discussed in conjunction with current activities in USAID/Nepal and USAID/Egypt. This section briefly describes others to bring attention to them at this time. They deserve a

more thorough discussion after additional information has been obtained from more USAID missions.¹

3.1 Data Related Activities as a Part of Mission Budgets.

Some mission staff thought that it would be a useful management tool to objectify mission involvement with data related activities. One way to do this is to develop an index which would indicate whether a mission's portfolio was over- or under-emphasizing data collection and analysis. For example, the ratio of mission staff to the mission's annual budget could be used. In Nepal, the ratio is approximately one staff person to \$800,000 in mission funds; whereas in Egypt the ratio is 1 to \$6 million. It might be the case that as this ratio increases, the mission's need for information also increases. These needs are met primarily through USAID projects and program activities which generate or acquire data. Therefore, as the ratio increases, data related activities should also increase. If the ratio was divided into broad categories - 1 to \$1 million or less, \$1 to \$3 million, \$3 to \$5 million, above \$5 million, it might be possible to suggest rough estimates of the percentage of the mission's budget which should be directed toward data related activities.

¹ To be obtained under Purchase Order No. OTR-0091-0-00-2314-00

3.2 Supplementing Mission Staff

Expanded data use and improved analysis in the missions will require personnel with sufficient work time and skills. One approach is to identify mission staff who could take a more active role in improving the mission's use of data. They would serve as the in-house source of technical assistance for the rest of the mission. For example, they could oversee data collection done under contract. The drawback to this is freeing up enough work time for this individual to perform this function adequately. In missions like USAID/Egypt, the need for technical assistance would probably warrant a full time position. An alternative would be to use consultants, but that might be expensive and less efficient. There is also the problem of getting assistance precisely when it is needed. There would also have to be a substantial need for assistance to warrant bringing in a consultant if one could not be found locally. Another consideration is that continuity in the advice given mission staff would make it more effective. USAID/Washington could consider developing an internal consulting capacity that could assist missions. PPC, for example, could help missions with the economic analyses for their CBSSs. But this too raises the problem of staffing and work time. Perhaps USDA/ERS or BuCen staff could be used to establish a long-term relationship with each mission.

One possibility that many in USAID/Nepal and USAID/Egypt thought could be very useful to the missions would be establishing regional centers for data collection and analysis assistance.

Particular missions could be designated as the regional center. The number of additional staff required would depend on the needs of the region. The center would be totally service oriented and provide all types of assistance pertaining to data use or arrange for it to be provided to the mission. The personnel assigned to the center would travel to each mission as they were needed and their performance would be judged by the missions in each region. They could also assist host countries with their information needs and coordinate data related activities with other international agencies. A major benefit of the regional center approach is that the staff would soon acquire a knowledge of all major data collection and analysis activities in the region which would give the missions a perspective which is currently absent in the Agency. USAID/Egypt would be a possible starting point for the Near East; other selected missions and regional centers, such as REDSO/EA and REDSO/WA, could provide similar services elsewhere.

3.3 USAID Data Banks

In an earlier report - "Quantitative Data for Rural Development: Options for Improvement in A.I.D." - I discussed reasons for and against developing USAID's data bases and in particular, a sub-national data bank. Discussions with mission staff in Nepal and Egypt suggest that there should be some capacity in the mission to acquire copies of useful data sets. With the proliferation of micro- and minicomputers, the previous hardware impasse can be over-

come. Missions could acquire copies of data sets produced by its projects and from their host country. This would give mission staff access to data that they could use for any number of purposes. It would also resolve the problem of repeatedly asking host government ministries for the same data. A mission copy would make the data available to USAID staff as well as to contractors working on mission funded projects. It would be relatively inexpensive to acquire copies of data sets as they became available and for a modest investment of time and money, mission use of data could be substantially increased.

3.4 Contractor Performance

The experiences of USAID/Nepal and USAID/Egypt with contractors hired to collect and analyze data have been a mixture of good and bad. Staff in USAID/Nepal reported that the work of local consulting firms has been of poor quality, but some firms, such as New Era, are now producing very competent work. Generally, outside contractors have performed adequately; for example, Westinghouse Health Systems was described as doing a very good job. Similarly, as described earlier, the contractor who developed the monitoring system for the Rapti Zone Project did an outstanding job. A problem did arise with the University of California team which worked on the FP/MCH study over the release of data. As a result, they did not perform the final analysis of the data.

USAID/Egypt staff described a much less satisfactory picture. One local consulting firm, FINTECS, which was a sub-contractor on Agricultural Mechanization, proved incapable of carrying out a baseline survey for which it was responsible. The prime contractor, Louis Berger, had to quickly step in to replace them. On the other hand, ECTOR headed by Dr. Wafik Masouna, was considered to have done a very good job on data collection for the urban health project. Even some of the biggest outside contractors, however, were widely criticized for low quality work by mission staff.

The Agency should take some basic steps toward improving contractor performance of data related activities:

- 1.) Scopes of work should be as precise as possible in stipulating what tasks are to be performed by the contractor. This will reduce later disagreements about the acceptability of submitted work.
- 2.) USAID should develop minimum standards for different data related tasks (e.g., collection, analyses) to be used to evaluate contractor performance. Contracts should stipulate that failure to meet these standards will result in less than full payment for services rendered.
- 3.) As I pointed out one year ago, contract language needs to be revised or clarified concerning the ownership/ delivery and

of data sets and accompanying documentation. Mission staff need to be made aware of what must be stated in contracts to guarantee the delivery of a usable data set. Standards for acceptable data sets, such as those that I suggested in the January, 1982 report, need to be implemented. These and other clauses pertaining to contractor performance need to be stated in such a fashion that USAID staff could insert them into any contract.

3.5 Greater Attention to Data Use and Support from USAID/Washington

Mission staff expressed the very credible view that Washington and PPC in particular has not been as active or supportive in regard to data use as it ought to be. Their suggestions for possible improvements include the following: 1.

1.) PPC should develop a standard set of analyses that the bureau considers fundamental to improving the analytic basis of mission planning and strategy formulation. This would provide missions with usable examples that if replicated, would be acceptable to PPC. PPC should work cooperatively with SER/DM to acquire or develop programs to do these analyses using hardware mission have or plan to purchase.

2.) PPC should provide assistance for better coordination of data related activities within the missions. One economist suggested that PPC could acquire input - output models for some missions.

1. PPC will have to work cooperatively with Regional Bureaux on several of these points.

The different divisions within the mission would then have a common model to use to estimate the economic effects of their projects and strategies. This might lead to data use coordination among offices and agreement on certain fundamentals, such as sampling designs, units of analysis, etc. The models could be purchased from academics who have written them and would be willing to make them usable to the Agency. Support would be necessary; someone within the mission would have to know how to use the model and interpret the results for others. Local economists could also help make necessary additions and adjustments to make the model correspond to current conditions.

3.) PPC should clarify the type of evaluation data projects should collect. A basic distinction can be drawn between process data and impact data. Process data would measure how effective a project or set of projects have been in creating conditions conducive to continued progress after the completion of the project(s). Impact data would measure the direct improvements a project has made to previously existing conditions, such as the improvement in the quality of life of rural communities. Process data is more difficult to collect than impact data, but it is oftentimes more telling.

4.) PPC should develop guidelines for an information strategy statement which would be included in a mission's CDSS. The

information strategy would specify what information needs the mission anticipates as a result of its program; the present status (e.g., adequacies and shortcomings) of available data to meet those needs; the mission's strategy for improving available data bases; and how projects and other mission activities will contribute to its information objectives. This will force missions to give more conscious attention to its information needs.

5.) One final one that I would suggest is that PPC should make explicit in all policy papers the estimated increase in data use which will result from compliance with new guidelines or objectives.

For example, USAID's Food and Agricultural Development Policy Paper (May, 1982) is rife with demands for greater data use. In addition to direct references to research and analysis (obviously requiring quantitative data), the paper makes numerous implicit demands, such as:

"An appropriate policy framework is one that:

1. relies largely on free markets, the provision of adequate production incentives and the provision of equitable access to resources so that the broad majority of farmers, rural private sector entrepreneurs and workers - both men and women - have productive opportunities for employment, saving and investment;..." (1982:3)

USAID missions are supposed to encourage host countries to revise agricultural policies along these lines. How can any mission enter into a policy dialogue of this sort if it does not know how much free markets are relied upon, whether production incentives are adequate, whether access to resources is equitable, and so forth? Moreover, how large is "largely", how much is "adequate", and what percentage, even roughly is the "broad majority" - 51%, 52% or 72% ? If PPC refuses to answer such questions or consider methods appropriate for answering them, then no USAID mission should have to do so on their own. Let PPC take the lead in creating a greater awareness of the difficulties missions confront in quantifying issues and providing demonstrable evidence of progress toward Agency objectives.

3.6 Final Summary

USAID/Nepal and USAID/Egypt reflect the diversity of capacities missions have for quantitative data related activities. In terms of staff size and funding, USAID/Nepal represents a small to intermediate sized mission. Basic agricultural, social and economic data are very limited. Data available from the GON are generally of questionable accuracy. This reflects the very limited capacity of Nepalese ministries for data collection and analysis. However, GON ministries are interested in and supportive of efforts to expand their capacity to use quantitative data for

administrative and planning purposes. USAID/Nepal's in-house use of quantitative data is handicapped by the lack of computer facilities in the mission. Overall the report argues that there is good reason to believe that mission activities will lead to the availability of better quality data in some areas and better data use by GON ministries.

USAID/Egypt represents the extreme in terms of the scale of mission operations. Though the enormous amounts of funds USAID/Egypt administers through its projects easily covers the expense of necessary data collection, foreign policy objectives which motivate such large expenditures frequently undercut the input data and analysis could have in project and program activities. The problem USAID/Egypt generally confronts is the need to refine, broaden and make more timely existing data bases. Indifference if not antipathy on the part of some ministry staff toward greater use of quantitative data for planning and decision making complicates efforts to improve data use within the GOE. Finally, the magnitude of mission operations exacerbates the problem of coordinating projects which have overlapping or complementary data needs. At the same time, the report draws attention to the accomplishments that have been made and progress which seems likely as a result of USAID/Egypt's current activities.

Despite the differences between these two missions, they do share some common problems and certain remedial actions would benefit both: 1) develop a replicable set of analyses for program and strategy formulation; 2) provide assistance for coordinating data use within the mission; 3) clarify whether output or process data are necessary for evaluations; and 4) provide guidelines for an information strategy statement in the CDSS. Technical assistance to mission staff will be necessary to expand and improve in-house use of quantitative data. The report strongly recommends that the Agency should give serious consideration to developing data banks within the missions.