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1. "Pakistan's Statistical System and the US AID Statistical Services Project" by Bruno A. Schiro, J. Edward Ely and Monroe Burk.
2. "Statistical Development in the Government of West Pakistan in 1967 and a Suggested Plan for the Next Years" by J. Edward Ely.
3. "Progress Report on Statistical Services in East Pakistan, 1961 - 1967" by J. Hugh Rose.
4. "Current Status of East Pakistan Statistics" by Joseph Lieberson.

### B. Project Inputs

1. Funding of the Project
2. Technicians Served
3. Participants Trained

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Pakistan's Statistical System  
and the  
USAID Statistical Services Project

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## Summary

The purpose of this paper is to describe the status of the USAID statistical services project in Pakistan and propose a constructive program for statistical development.

Statistical work is primarily in the three focal agencies, i. e. the CSO and the East and West Pakistan Bureaus of Statistics. An important part of the statistical output is as well produced in functional departments and ministries. Duplication and overlap of statistical work is widespread. Staffing is reasonably adequate but persons with the requisite skills and knowledge are weak in many areas. Users are not being adequately served mainly because of the poor quality (and timeliness) of the statistics. Poor quality largely results from deficiencies in statistical procedures and techniques and the lack of statistical standards. Legal authority for coordination and the enforcement of statistical standards is inadequate.

Pakistan had essentially no statistical system at independence. A system has been established and substantial resources obtained for its operation. Censuses have been inaugurated and a large number of statistical series started. A rudimentary system for coordinating and

establishing statistical standards has been set up. Staff skills have been created almost from scratch. Conventional data processing equipment has been installed and operating reasonably efficiently. Conversion to computers is in process. Major deficiencies in statistical procedures and techniques have been overcome and progress continues, supported by increased skill in data processing and by participant training.

The Government of Pakistan, Government of East Pakistan and Government of West Pakistan must provide adequate resources for statistical work and act effectively to strengthen coordination and enforcement of statistical standards.

USAID/Pakistan has a dual role. As the most important contributor to aid and statistical development it will make known to the Government of Pakistan its needs (and the needs of the consortium, IBRD, IMF, etc.) for statistics necessary for development and assistance programs. The Mission will also support the statistical services project which is the outstanding source of technical assistance in statistics in Pakistan.

The statistical services project until its termination in Fiscal 1971 will concentrate on bringing statistical quality to adequate levels by training Pakistanis in the systems approach in statistics, exploiting the

substantial capabilities of computers for producing timely and accurate statistics, and establishing adequate crop reports on acreage, yield and total production. It is intended that passable performance in these areas will be achieved by 1971.

Any necessary technical assistance in family planning, and for the 1969-70 census of agriculture and the 1971 census of population will be accomplished by establishing separate projects for such work, funded by the specific USAID Projects benefited rather than as part of the statistical services project.

## I. Statistical Requirements

### A. User Requirements

The types, frequency and reliability of statistical data required by an economy depend on the use to which the data is to be put. The cost of obtaining additional information may exceed the potential benefits from improved decision-making and it is important to strike a realistic balance between expenditures for improvement of statistics and potential benefits.

The type and quality of statistics required in any country depend on the economy's structure and its stage of development. For some economics, the decisions required are often only of a conceptual nature so that very little information, save what meets the eye, is required. In some countries it may not be very wrong if investments are made in agriculture production, schooling, transportation or almost any important economic sector, as virtually everything is equally in short supply. For economics entering critical periods of their growth process, however, many alternative policies and investment opportunities appear on the surface to be reasonable, and only sophisticated analysis based on adequate statistics can help the decision-maker. Pakistan is at the stage of development where for the type of economy which the government is attempting to run, its decision-making requirements exceed by a considerable margin the availability of data.

Pakistan is largely a private enterprise economy, with perhaps only about 15% of the GNP produced by government entities. The government is however actively interventionist; private industrial investment is directed by an industrial licensing procedure; private trade is dependent on the foreign exchange allocation machinery and discretionary foreign exchange pricing; production is influenced by government support prices and price ceilings; and in the area of social services, the government attempts to influence family decisions (e. g. family planning.) In addition, the government attempts to use general monetary and fiscal policy to influence trade and investment.

What is being attempted is extremely difficult, for the government cannot compel but can merely enable private citizens to carry out certain economic functions. If the government's investment schedule or foreign trade regulations are not realistic, private investment will not occur or trade will diminish. Since the quality of government decisions are of the utmost importance in directing the economy; there must be a high premium placed on adequate and timely statistics.

1. Planning Process and the Need for Statistics. The process of directing the economy is greatly aided by an economic planning system which consists of the following components: (a) long term planning, (b) five year planning, (c) annual development planning and financing, including a statement of monetary and fiscal policy for the year, (d) annual

plan appraisal (mid-plan reviews) and formulation and justification of foreign aid request, (e) project review (PC-1 process) and (f) project monitoring. Each of these components places large demands on the statistical system.

Long term and medium term planning is accomplished with the assistance of econometric tools, particularly a seven-sector economic model and a 30-30 input-output table. The parametric values for the model are derived from the input-output table, import data, and elasticity studies.

Because of the absence or inconsistency of much of the data available to the Planning Commission, a large number of the entries are derived from Indian statistics, engineering estimates, and statistical intuition. Such deficiencies have induced a certain reluctance on the part of both Pakistani and foreign policy makers to rely heavily on the econometric system, and a number of important policy debates have taken place over the reliability of certain values derived from the model.

Other components of the planning process (e. g. project appraisal and implementation review) require not only general purpose statistics but administrative statistics as well.

It is apparent that, in order to utilize effectively the formidable planning system already developed, a corresponding improvement must take place in the statistical system. The statistical requirements for

econometric planning are well established and may be stated as the data required to construct, from independent sources, articulated national accounts and money-flow accounts, and a moderately detailed input-output table. To construct such accounts it is required to have resource data (population, labor force, land resources, capital equipment, housing and other structures, etc.); transactions data (purchase and sales by firms, households and governments) for base years; and time series describing major input, output, and utilization components and prices. Such a system is improved by access to all types of administrative data, including data on operations and activities of government taxing, budgetary, supervisory and operating agencies; and business activities revealed in balance sheets and profit and loss accounts, activities of financial corporations and banks. For the exercise of fiscal and monetary controls, timeliness of time-series data is extremely important; a lag of more than three months in availability of data prejudices greatly the possibilities of success.

2. Turning Point Problems and Statistical Requirements. There are a number of additional reasons supporting a requirement for a fully developed statistical system. Pakistan, in its third Five Year Plan period, has entered the period in which financial resources constitute the constraint on development. This is not to say that there are

not still large areas, particularly in the human resources field, where Pakistan has yet to adopt new approaches and ideas and where it must improve on the administrative capacity. Outside of these areas, however, Pakistan is faced with the need to make maximization or optimization decisions in order to put its limited resources to best use. In transportation, should it expand ports, roads, waterways or airfields? In industry, should it develop further consumer goods, intermediates, or equipment and machinery production? In agriculture, should it encourage cereal or protein production?

The basic statistical raw materials to make decisions in these and related fields frequently requires more detailed statistics than those indicated above and substantially increases the need to build and have available a capacity for making accurate surveys. Survey work is however greatly assisted by data which identifies the particular population or universe to be surveyed to provide a frame for sampling. Accurate base data derived largely from censuses are most valuable for this purpose.

In a number of areas, Pakistan's development has reached a point where a decision has to be made whether or not to reverse a previous trend. It is a characteristic of linear programming, which reflects in pure form what occurs in real decision-making, that a trend line must

be turned abruptly. A current example of this is wheat production in West Pakistan. Wheat production has apparently reached a point where a decision should be made as to whether or not production should be further encouraged (by subsidies, price support, etc.,) partly to produce an export for surplus or it should be stabilized or cut back. A relevant consideration is that as per capita income increases, the portion of per capita expenditures devoted to cereals decreases; hence, domestic consumption may stabilize or even diminish. Another broader example is consumption expenditure generally. At present efforts are aimed at compressing consumption and expanding investment. At some point, however, the domestic market must be expanded to take up the products produced by agriculture and industry which cannot, by their nature, be exported. A third illustration is foreign loans contracted. At some point the government must give up its search for additional loans and reduce its total indebtedness in order to avoid an impossible debt burden position.

In these and many other areas, a previous decision must be reversed. Experience teaches that a reversal of a basic decision is one of the hardest types of decisions to make politically, as vested interests seek to perpetuate the previous decision. Naturally, the process of reversing decisions is made easier by a cogent array of facts and arguments.

Because timing is of the essence in decisions of this sort, it is essential that the data on which policy decisions are made be accurate and timely. It is of considerable importance whether wheat production in West Pakistan is now 6 million or 7 million per annum, whether the population is 52 million or 56 million and whether per capita income is rising at 1.5% or 2.5%. In a typical turning point problem, where one often deals with residuals, small changes in the base data often reverse the results.

3. Foreign Aid Statistical Requirement. Foreign aid donors are also important users of statistics and often have more exacting requirements than the Pakistan Government. Foreign aid donors use Pakistani statistics for formulating policy advice, programming aid, judging the feasibility of particular projects, judging the fulfillment of self-help pledges, and judging the impact of their assistance efforts. To meet these requirements, donors, and particularly the U.S., require the type of data appearing in the C tables (National Accounts, Balance of Payments, Budgets, Production Trends, Prices, as well as Social Statistics, e.g. education, literacy, population growth, unemployment, etc.) as well as census data and data aimed at specific problems.

However, the donor must be capable of judging the accuracy of the statistics, as it is not impossible or even difficult for a country to publish a limited amount of consistent but totally unreliable figures.

The problem of adjusting figures to achieve consistency however becomes more and more difficult as the number and variety of presumably independent

series increases. For example, domestic production of motor vehicles, foreign exchange spent on import of motor vehicles, auto spare parts imported, excise taxes on local auto production, import duties on auto imports, auto registration, automobile tires production and sales, and gasoline sales all can be used to provide a cross check on auto utilization and also to build up data on expenditure patterns. Since each of the series meet different administrative or general statistical needs, it would be self-defeating for any governmental authority to try for political purposes to align all the figures to achieve mutual consistency. If for no other purpose than for the foreign aid donors to achieve an estimate of reliability of general purpose statistics, it is useful to have the host country prepare and publish useful administratively derived data in addition to data compiled solely for statistical purposes. It should be recognized that the case for record keeping in connection with government operations (e.g. tax collections, expenditures, government personnel, housing permits, vehicle registration, water utilization, power utilization, etc.,) is primarily for administrative purposes but that there is also a need to have them available and where necessary adjusted, for general purposes use.

4. Technological Breakthrough in Statistics. Comprehensive, well-designed, and reliable national statistical systems have been developed only in the last 40 years, and it is not to be expected that Pakistan's statistical system can quickly reach the reliability and comprehensiveness levels of the U.S. or other developed countries. Because of the type of

economy which the Pakistan Government is attempting to manage, however, as pointed out above, Pakistan's statistical needs far exceed that of the U.S. at a comparable stage of development. Moreover, with the development of statistics as a scientific discipline and with the breakthrough in statistical technology brought about by the computer, statistics have become much more useful as a tool of economic management than in the past. There is, as a consequence, great scope for improvement not only in economic decision-making at the highest levels but for improved administration of routine government functions, such as tax collection, registration of vehicles, employment exchange administration, etc. Moreover, great economies are possible in the administration of the statistical system itself. The cost of the statistical system consists not only of the costs borne by the collecting and publishing organizations but also those born by the users. In Pakistan, the users bear a disproportionate cost in assembling, investigating, cross-checking, rearranging and interpreting statistics made available by government organizations. In many cases the statistics as finally assembled are considered so unreliable as to have only very limited usefulness. Yearly, sums running into the millions of dollars are spent on preparing feasibility studies, and a substantial part of such studies consists in adjusting base data, or obtaining finer breakdowns than those available publicly. In preparing a feasibility report on a proposed steel mill, for example, a foreign consultant firm devoted one man-year to the task of reworking the import data to yield a particular

breakdown. Had the data been properly organized in the first place, and placed on a computer, the data requirement could have been met in minutes or hours and at a fraction of the cost.

In summary, the economic management problems now confronting Pakistan and the particular means chosen to solve them place a great demand on accurate and timely statistics. The cost of a comprehensive system is likely to be no greater than the present statistical collection and publication efforts which are frequently duplicative.

#### B. Quality Control and Production Standards for Statistics

Reliability and usefulness of statistics are determined by the quality control procedures used in its production. The quality of a statistic cannot be judged by its apparent reasonableness and freedom from contradiction with other statistics, as the most unlikely statistic may actually be the true one, and the expected statistic the false one.

From the US statistical experience, in terms of concepts, institutions, and procedures, some of the requirements of a sound statistical system may be noted.

The development of a statistical system to meet legitimate needs should be recognized as a national responsibility to which sufficient financial and human resources should be devoted. Citizens, firms and other entities, have a responsibility to make data available, and statistical agencies have a responsibility to maintain the confidentiality of such data. A public authority should be charged with the task of

conceiving a comprehensive statistical system and for allocating responsibility to public and private agencies for collecting, processing, and publishing statistics so as to assure comprehensiveness and avoid unnecessary duplication. Some public body must also establish quality standards against which each statistical project is measured; those failing the standard must either be improved or discontinued. Quality standards define professionally acceptable procedures and techniques at the stage of planning and design; field collection, editing, and tabulating; and publication and distribution. Well established procedures have been worked out to achieve an unbiased and acceptable level of sampling of a statistical universe, to determine the validity and reliability of the data collected, and to insure against arithmetic and mechanical errors, and, in publication, to reveal to the user what he must know about the reliability and accuracy of the data. It has been found in American practice that the compilers, unsupervised by an overall body, cannot be entirely relied on for adherence to strict performance and quality standards.

## II. Statistical System in Pakistan

### A. Description of Present System

The statistical system of Pakistan is still in an early stage of development. The system is not on a firm legal footing, is administratively poorly organized, has important gaps in coverage, and its output is of low reliability and is not timely. These generalizations apply particularly

to general purpose statistics, but as well characterize administrative statistics and those collected for special statistics.<sup>1/</sup>

1. Allocation of Functions. The statistical system of Pakistan is highly decentralized and relies heavily on administratively generated statistics originating from such functions as tax collection, railway administration, foreign exchange control, etc.

Each of the three government units has a focal point for statistical work, Central Statistical Organization in the Central Government and the two Provincial Bureaus of Statistics in East and West Pakistan. The CSO, the leading statistical organization with approximately 800 employees including 64 statistical officers, is organized into the following divisions:

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<sup>1/</sup> General purpose statistics (e. g. population, production, prices) are statistics which are used in the analyses of many different kinds of problems. Normally, a central statistical authority is responsible for them. This authority may obtain the statistics through its own collection or survey organizations, or through the specialized statistical collection agencies of other departments, or may utilize as raw materials statistics developed by administrative organizations in the course of their work. An administrative organization will also develop special purpose statistics, such as hours of operation of tubewells, which will normally not be reprocessed and distributed for general use. It follows that a central statistical organization has a greater interest in general purpose statistics than in the special purpose data which government organizations may develop for their own relatively narrow use.

Staff

Director General's Office  
 Administrative Services Division  
 Coordination and Development (including liaison with  
 foreign and international organizations)  
 Sampling (including subject matter responsibility for  
 the National Sample Survey)  
 Publications  
 Statistical Analysis and Training  
 National Statistical Council's Secretariat

The following constitutes the principal statistical subject of  
 the CSO:

Subject Matter

Business, Communication and Special Studies  
 Demographic and Social Statistics  
 Gas, Electricity and Mining  
 Construction and Housing  
 Industry  
 Labor  
 National Accounts Coordination  
 National Income  
 Price  
 External Trade

The operations of the CSO breaks down as follows:

Operations

Data Processing (staff of 55)  
 Reproduction ( )  
 Field Services (20 field offices with a staff of 200)

In West Pakistan the Bureau of Statistics has about 50 employees,  
 including about 10 statistical officers, and is organized in the following  
 divisions (no field officers):

1. Administrative Services
2. Industrial Statistics
3. Agricultural Statistics
4. Data Processing (staff of about 20)

East Pakistan has a total staff of 350 including about 24

statistical officers and is organized in the following divisions:

1. Administrative Services
2. Vital Statistics
3. Industry Statistics
4. Price Statistics
5. Survey Wing (six regional offices)
6. Data Processing

The CSO has a large data processing division with a total of 55 employees who are presently working on two shifts. The Division has two tabulators. The West Pakistan Bureau of Statistics has a smaller but rapidly growing data processing section working with about 20 employees on one shift. This Bureau has one tabulator which is only about approximately 60% utilized. The East Pakistan Bureau of Statistics has a growing data processing division staffed with approximately 45 employees. It has one tabulator which is being utilized about <sup>80</sup>~~20~~ percent of its capacity.

In addition to these three general statistical agencies, other key agencies involved in statistical collection and publication are:

(a) In the Center Government:

Ministry of Agriculture (Census of Agriculture)  
 Ministry of Home Affairs (Population Census)  
 Ministry of Health (Vital Statistics and Family  
 Planning Performance)  
 State Bank of Pakistan (Financial & Monetary)

(b) In West Pakistan:

Department of Agriculture (Crop Reporting and other  
 Agricultural statistics)  
 Directorate of Labor & Social Welfare (Labor Statistics)  
 Directorate of Industries (Industry Statistics)  
 Department of Education (Education Statistics)

(c) In East Pakistan:

Bureau of Agricultural Statistics (Crop Reporting)  
Directorate of Labor & Social Welfare (Labor Statistics)  
Institute of Statistical Research & Training, University  
of Dacca (Training)  
Department of Education (Education Statistics).

2. Personnel Systems. Recruitment of technical and higher level staff for the three statistical agencies is by the Public Services Commission. Most of the lower grade posts are recruited directly by the statistical agencies. Recruitment in functional organizations which contribute substantially to general purpose statistics is essentially the same except that chief statistical officers of such functional organizations are frequently untrained in statistics and are often rotated in and out of these positions.

The minimum qualifications of statistical officers is in general a Master's in Statistics or Economics, essentially comparable to a Bachelor's degree in the U.S. The minimum qualification for investigators is a Bachelor's with major in Economics or Statistics.

Salary levels for entering statistical officers are Rs. 300.00 per month plus an unmeasurable amount for fringe benefits. Increases in salary are in small increments on an annual basis and grade promotions are so slow that a person when promoted gets a very small increase in salary. All promotions are in a strict seniority basis. The CSO is

responsible for conducting in-service training programs. At any one time, there are approximately 10 to 15 employees taking in-service training courses for part of the day. In the West Pakistan Bureau of Statistics there are essentially no in-service training courses. In the East Pakistan Bureau of Statistics there are full time in-service training courses in data processing plus recently started in-service training course for field workers at the Bureau of Agriculture Statistics.

3. University and Other Training for Statistical Work. The best statistical departments in universities are in Dacca, Karachi and Lahore. University training has suffered from a very heavy emphasis on the academic mathematical aspects of statistics with virtually no practical application in survey methods such as analysis of response variability and bias. An exception is the Institute of Statistical Research and Training at the University in Dacca which has started practical work through conducting surveys plus a "certificate" program in applied statistics for non-graduates. Also to be mentioned is the Institute of Business Administration at the University of Karachi. Both these institutes provide courses for government workers desirous of improving their capability. The Social Science Research Center at the University of Punjab has been somewhat less successful. Perhaps the outstanding agency for providing research opportunity and training to a small group at any one time is the Pakistan Institute of Development Economics.

## B. Deficiencies in The Pakistan System

The situation in Pakistan today is that the statistics do not adhere to minimum quality standards, and are so presented as not to warn users of their reliability. The fault lies partly in constitutional difficulties, partly in general problems of public organization, and partly because Pakistanis, as a whole, have not developed an adequate appreciation of statistical professionalism. Those ideas are developed in the paragraphs below:

1. Constitutional Difficulties. General purpose statistical work in Pakistan suffers from the division of responsibility between East and West Pakistan and the difficulty of integrating statistical work in the two wings through the central government. While the constitution of Pakistan reserves to the central government a limited statistical responsibility (foreign trade, population, military goods, etc.) the central government over the years has been attempting to increase its area of statistical responsibility. The reason is that in a large part the planning and development functions have been mainly vested in the central government. With the emergence of regional planning, the provincial statistical organizations have attempted to increase their prerogatives in this field. A clear indication of this is the assumption by the provincial governments

of essentially all planning and implementation functions for transportation development in West Pakistan. The prevailing trend therefore is for more statistical work to be undertaken in the wings than in the past.

2. Legal Foundations. Another difficulty in statistical organization in Pakistan is that there are few clear legal provisions conferring authority on a government entity to collect and publish statistics. An exception is the Census of Manufacturing Industries for which responsibility has been assigned under a pre-partition law to the Directorate of Industries in West Pakistan and the Bureau of Statistics in East Pakistan. In addition, a population census is authorized in the Constitution and in the Census Ordinance of 1959 and the responsibility for it has been assigned to the Ministry of Home and Kashmir Affairs. To remedy deficiencies in the fixing of responsibility for various statistical functions, a General Statistics Act has been drafted. This draft act authorizes the compilation of other statistics and also confers statutory status on the National Statistical Council - the coordinator of statistical and activities of the center and provinces - which presently exists only under administrative authority.

A second difficulty is the lack of institutional guidance in establishing and enforcing statistical standards. The Central Statistical Office, which has some status in this area by virtue of the fact that it constitutes the

secretariat of the National Statistical Council, does not have authority to enforce standards on other center agencies or on provincial agencies, but will have this authority for center agencies after passage of the General Statistics Act.

Another difficulty in statistical organization in Pakistan is the lack of legal provision for confidential treatment of information provided by respondents for statistical purposes. This too is established in the draft act.

3. Statistical Procedures. Because of a lack of professionalism in statistics in Pakistan, and uniform administrative practices, the statistical procedures used are far from satisfactory, as specified below:

(a) Lack of adequate pre-testing and planning of surveys, i.e.

lack of statistical systems work.

Almost universally statistical surveys in Pakistan are undertaken with practically no pre-testing and only primitive planning. There is a vast inertia to be overcome here in large part because of the widespread attitude that any one can compile statistics, that statistics can be compiled without planning, that statistical work can go forward effectively on a crash basis, and that no quality control, methodological investigations, training procedures, post-enumeration surveys,

etc. are necessary. This attitude is particularly a problem in administrative by-product statistics where there is an almost total lack of quality control of statistical data. It also shows itself in the excessive reliance on administrative staff to do the work of data gathering for purely general purpose statistics on a part time basis. Where the field staff for statistical surveys consists of administrative staff who have been assigned statistical work as an additional chore, it is extremely unlikely that such a staff is able to obtain accurate information since it is without training, clear definition of concepts, or control procedures.

- (b) Excessive reliance is placed on using administrative by-product statistics to fulfill general purpose statistical needs. For example, reliance is placed on the Excise and Taxation Department to provide statistics on motor vehicles paying road taxes with separate categories for diesel and gasoline power, public and private goods carriers, etc. The Excise and Taxation Department has no reliable method of reporting such separate categories. An adequate approach using pre-testing and systems work might well have determined that certain of the general purpose statistics on vehicles could be obtained from Excise and Taxation but that other statistics could only be obtained from other sources.

(c) While a systems approach to statistical collection starts with a clear concept of what is to be measured, the approach often used in Pakistan is to look for a general purpose use of an administrative statistic which happens to be available. There is also a tendency to make changes in the legal requirements under which the information is obtained in order to obtain the statistical information. This is not a practical approach in many cases, and results in neither an improvement in administration nor in statistics.

(d) Lack of effective use of sampling techniques.

Partly as a result of reliance on administrative staff to do fact gathering for general purpose statistics and on administrative by-product statistics, sampling techniques are little used and many surveys are taken on a 100% basis. Since there is often not sufficient capable staff available nor adequate training, supervision, and control of the operation, the results are often highly unreliable. Moreover, the lack of familiarity with sampling practice has resulted in almost complete lack of sampling quality control procedures in the operations following data gathering.

(e) The post enumeration sampling survey (PESS) technique has been used infrequently and, where it has been, has been carried out ineffectively. Effective and useable statistics can be compiled even though they are subject to biases. For example, population census are universally subject to important biases of under-enumeration but this does not seriously hamper their use if there is an adequate post-enumeration sample survey (PESS) measuring biases. The United States Population Census, for example, seriously undercounts segments of the population particularly non-white males but the extent of this undercounting can be measured by a careful PESS which will show the characteristics of the persons undercounted. The final tables may then be adjusted or the size of the biases stated in the notes to the tables.

(f) Lack of accuracy in arithmetic.

Apparently as a result of the reliance on administrative staff to provide statistical information, arithmetic errors are far too common in statistical work. Since this administrative staff is spread throughout the country, it is not practicable to provide mechanical assistance for the arithmetic work. As a result, even the task of adding manually results in wide variance

in totals. While these may be assumed to be self-compensating over a large volume of work (however very little is known as to whether or not there may not in fact be biases, particularly by individuals) much of the arithmetic done in the field is not of a large enough volume to assume self-compensating errors. The remedy here of course is centralization of the arithmetic work thereby making it feasible to use mechanical or even electronic equipment.

(g) Lack of credibility checks.

The use of credibility checks in Pakistan statistical work is extremely limited and may be characterized as substantially inadequate. Standard operating procedures in statistical compiling work of seeing that statistical results are consistent from observation to observation or from category to category are used very seldom; comparison of figures appearing in new surveys with data in earlier comparable surveys is apparently carried out very seldom.

(h) Callback to obtain omitted or inconsistent information is relatively rare. Missing or inconsistent data is frequently imputed (guessed at).

- (i) Non-response on mail questionnaires, or in interview surveys where respondents are not available for interview, is not well controlled and statistical results are frequently presented with far too heavy a proportion of non-response.
- (j) Inadequate use is made of check totals to assure adequate coverage and accurate reporting.
- (k) The presentation of statistics does not generally make a differentiation between estimated and compiled data and does not provide a description of the basis for estimates or of the type of surveys from which the data was prepared. Users of the data are frequently very much at a loss to understand how to use the data. A predictable result is that there is widespread lack of confidence in all statistics; although some statistics may be reasonably reliable, they may therefore be treated with less confidence than is warranted.

4. Government Administration. Statistical agencies usually have the status of attached departments. The heads of such attached departments have little authority to make other than routine decisions, and all matters pertaining to additional personnel and equipment, or requiring major changes in procedures must be referred to the Secretary level through channels. The Secretary or his advisers, who are normally from

the ranks of the Civil Service, have no special competence in statistics and often do not seek advice from professionals in the field. There is thus often a lack of professional expertise in making decisions affecting statistical services.

One of the consequences of this is that statistical agencies often cannot defend their budgets or their requests for funds. Another is that statistical agency's procedures cannot be modified without inordinate and time consuming clearance. Since priority is, as a matter of principle, given to activities deemed to be directly productive, statistical agencies are frequently starved of buildings, equipment, running expenses and high quality personnel.

The statistical services are frequently unable to attract competent personnel both because salaries are often lower than in comparable activities and because statistical services carry low prestige. There is little room for advancement, and advancement is strictly based on seniority rights. Since, in addition, the level of professional statistical training in the universities is far from satisfactory, and the quantitative capacities of junior personnel are little developed in the secondary schools and colleges, the problem of maintaining competent staffs is a vexing one.

5. Difficulties with Specific Types of Statistics. The following are some examples of the difficulties in the existing statistics of the Government of Pakistan and the Governments of East and West Pakistan.

- (a) The 1961 Census of Population has been a source of almost continuous dispute as to how serious the under-enumeration was.
- (b) The census of establishments contains figures which are inconsistent with those in the Census of Manufacturing Industries.
- (c) Foreign trade data contains obvious inconsistencies such as figures on import of typewriters with a unit value of Rs. 5.00.
- (d) Lack of coverage of foreign trade statistics has occurred as a result of lack of control over flow of foreign trade documents from individual ports and this has in turn caused substantial concentrated under-enumeration and biases.
- (e) The West Pakistan Census of Manufacturing Industries (CMI) has been based on reports which are widely inconsistent among establishments. An outside consultant stated that "the imagination boggles" at this. Moreover the statistics are substantially incomplete since non-response has been about 20% and this has not been distributed evenly over different types of industries. Finally a high proportion of the information shown in these statistics has been imputed (guessed at) when the establishment omitted reporting particular items on the questionnaire; the imputation for some items has been 25% or more in several industries and more than 50% in at least one.

A basic difficulty is that there has been no pre-testing of the CMI questionnaire and it is probable that it is impractical for all establishments to answer adequately a number of the questions on the form.

- (f) Crop acreage statistics in West Pakistan are essentially estimates in the Sind area, and while they are apparently compiled in other areas the procedures followed are extremely error-prone and unlikely to produce statistics of reasonable accuracy; the basic difficulty is the sheer volume of the data processing work of compiling statistics and administrative information on the roughly 1000,000,000 plots of land in West Pakistan even though the data itself is relatively simple.
- (g) Motor vehicle statistics in West Pakistan are in many respects estimates even though users have taken them to be compiled figures.
- (h) A limited check on the West Pakistan livestock census has disclosed that there were serious conceptual difficulties in enumeration, and that the enumeration was very inconsistent from one mauza (village) to another with resulting wide discrepancies; there was an indication of substantial under-counting.

- (i) The sampling plan used in West Pakistan for crop cutting experiments to estimate yields of leading crops is inefficient and creates biases. In East Pakistan the sampling procedures are well developed but supervision and control of the crop cutting is deficient.
- (j) Statistics being compiled by the West Pakistan Bureau of Statistics for the Department of Labor Welfare on individual occupations are probably inadequate and misleading since the list of establishments surveyed appears to be deficient and the information has not been adequately pre-tested and scrutinized.
- (k) The 1959-60 Agricultural Census suffered from the difficulty that the data as finally tabulated had to be subjected to major rough adjustments, casting doubt on many of the measurements; a census should provide reliable benchmark data but this one basically did not.
- (l) The measures of consumer price statistics exclude direct measurements of changes in residential rents. It is assumed there is no change in costs of shelter. The relative importance of ration shop flour versus free market flour is not based on objective evidence.
- (m) In East Pakistan the survey of wholesale Building Materials costs and Wage Rates has been attempting to get data as far back as two years ago, introducing high levels of recall bias; enumerators have obtained information from wholesalers who do not consult their records.
- (n) Registration of vital events (births and deaths) required by law is not enforced and compilation methods are completely inadequate.
- (o) Price statistics in East Pakistan are collected by several agencies with overlapping and duplication of effort and yet there is no provincialwide price series. Consumer price indexes suffer the same difficulties.

### III. Program For Action

#### A. What the GOP, GOEP and GOWP Need to Do

The requirements for reliable and comprehensive statistics are becoming more urgent as the development process takes hold. The deficiencies in the statistical system are, however, deeply rooted, and it is evident that more is required than just additional financial resources.

Looked at the subject in general terms, it can be said that the Government of Pakistan as well as the Governments of East and West Pakistan <sup>recently have been</sup> ~~are~~ providing reasonably adequate resources except for the agriculture and population censuses of 1969 and 1971. With these two exceptions, they have been somewhat alert to changing needs for statistics and provided roughly the necessary resource inputs; in a number of cases this has taken the form of requesting USAID or other organizations for financial assistance. In general, the Provincial Bureaus of Statistics particularly in West Pakistan, have been more limited than the CSO in the resources provided for their work.

With the growth in statistical needs and to take advantage of the qualitative and quantitative improvements provided by the new technology, there must however be a more or less continuous growth in the amount of resources provided. A particular area which will require action on the part of the Government of Pakistan is in adjusting to computer

technology in statistics. The Central Government is acting effectively in this area and the Government of West Pakistan appears to be receptive towards moving ahead. In East Pakistan a committee has been formed with the U.S. Data Processing Advisor as a member-advisor, to undertake a computer feasibility study with a report to be prepared for decision by the Planning Department prior to 15 May 1968.

This generally favorable financial situation still leaves a number of vital areas where the Government of Pakistan must provide additional resources if the statistical program is to be reasonably effective. A particular problem is that of increasing the salary level of all trained and experienced statisticians to prevent a drain from statistical to other work. This will become particularly acute as the transition to computer begins to take place, since the government salary structure is much too low to keep computer technologists from leaving statistical work for work in other government agencies or in private industry. There are other specific needs for greater resources in statistical work on a relatively minor scale which the government must be encouraged to meet promptly. For example, the Bureau of Statistics of West Pakistan has far too few statistical officers both on board and in the process of being hired. Moreover, the West Pakistan Bureau of Statistics should be increased in status

and provided with administrative flexibility by being headed by some one at Joint Secretary level rather than the present substantially lower Director level. In East Pakistan the post of Director of Bureau of Statistics is in the <sup>Deputy</sup> Secretary level (CSP) but the post has been vacant for six months, this hiatus must be eliminated very soon since the work of the BOS is suffering substantially; provision should be made to prevent a recurrence of this situation, as it has in the past nearly every year.

Major changes must however be made in the Government's appreciation of the statistical system - the principles, concepts, institutions and procedures needed to produce meaningful and useful statistics. This is discussed in the next section as part of the task of the US project in statistics.

#### B. U.S. Program for Action

1. Accomplishments of the Program to Date. Accomplishment in statistical development has been substantial despite the uniquely unfavorable situation for the development of statistics in Pakistan as compared to other countries and the rather small in-put of statistical assistance over a long period of time. By fiscal years the deployment has been: (PASA *Advancing*)

1952	1	1958	3	1964	7
1953	1	1959	3	1965	7
1954	2	1960	3	1966	9
1955	2	1961	4	1967	9
1956	2	1962	4	1968	9
1957	3	1963	4		

Technical assistance was at the low level of from one to three advisers through Fiscal 1960 and it was not until 1961 that technical assistance of any consequence was started in the Provincial Wings. The volume of technical assistance has been at a substantially lower level than that provided to other countries only one-tenth to one half as large as Pakistan in terms of the number of persons employed on statistical work. The following brief summary of accomplishments to date in major areas includes many improvements made during the early period of very limited technical assistance:

Provision of staff for statistical work

The growth of staff in the three focal statistical agencies has been as follows:

	<u>CSO</u>	<u>EPBOS</u>	<u>WPBOS(Established 1958)</u>
1959	100	90	25
1964	500	220	50
1968	800	350	60

From 1951 to 1958, the CSO operated without a Director General. U.S. Advisers during this period were assigned the de facto responsibilities of the office. A similar situation occurred in BOS of GOWP in the years 1963-64. They developed the organizational framework which the CSO evolved into in later years as functions and staff expanded. They were responsible for the initial introduction of National income accounting,

industrial statistics (including the Index of Industrial Production), price statistics, labor force statistics and family income and expenditure surveys.

There has been a comparable increase in the staff and resources for statistical work in the departments of agriculture of each of the wings which are the principal sources for general purpose agricultural statistics. A recent development is the provision of \$500,000 for improvements in crop reporting in West Pakistan by the West Pakistan department of agriculture. *With recent field staff increase, the East Pakistan Bureau of Agriculture Statistics, has now reached over 200 employees.*

--Establishment of the National Statistical Council and the Provincial Statistical Council in East Pakistan

An important step towards the establishment of statistical standards and the coordination of statistical work in East and West Pakistan and the Central Government was the establishment of the National Statistical Council in 1962 and a Provincial Statistical Council in East Pakistan in 1967. Statistical standards and coordination are still far from being adequate.

The NSC operating through a Technical Advisory Committee and Working Panels and groups on all major subject areas of statistics, such as Industrial Statistics, Labor Statistics, Distribution Trade Statistics, provide the opportunity to seek agreement on standards and procedures, and to resolve conflicts. For example, a working group has been appointed

recently to establish common standards for both East and West Pakistan on edit procedures, tolerance limits for non-response and computation, on the Census of Manufacturing Industries.

The legal basis for the NSC is provided for in the Draft General Statistics Act, prepared by U.S. Advisors, and still in process of clearance for presentation to the National Assembly. This act in addition provides the legal basis of all statistics work in Pakistan, establishes the highly essential confidentiality of response principle, and provides for the appointment of a competent statistical authority with responsibility for statistical development in the Central Government and each of the Provinces.

--Objective Measurement of Current Agricultural Production

In East Pakistan, after a five year period of technical assistance (the usual gestation period) objective measurement of current production of jute and rice on a probability sample basis and with crop cutting observations have been established as the <sup>primary basis for</sup> official statistics superseding the sight estimates previously used. Sight observations normally have a built-in ~~downward~~ bias and while they measure a direction of year-to-year changes in yield, they are a very poor measure of magnitude of these changes. Work on similar objective measurements for wheat in West Pakistan has been established although the results have not been

used as a basis for official estimates. Similar objective measurements have been started on rice, cotton, sugar cane, and maize but are not as yet as well developed; technical assistance started a year ago.

--Data Processing Capabilities

Data Processing capability on conventional equipment is well established in the CSO and is in process of development in East and West Pakistan. The CSO is well on the way to obtaining a computer within the next six to nine months and has started to train programmers and systems analysts. West Pakistan will apparently acquire a computer within the next year or two and is starting to plan for such an installation. East Pakistan <sup>recently started</sup> ~~is not yet seriously~~ considering acquiring a computer but is already doing some work on a computer located in Dacca.

--Use of Probability Samples

Despite the difficulties of introducing probability sampling in an area oriented toward full counts which are characteristic of administrative and administrative by-product statistics, substantial progress has been made in the introduction of probability sampling in the National Sample Survey, in the population growth survey, in crop reporting and in other areas. Some sort of break through also was accomplished in the 1959-60 agricultural census which was based on a probability sample even though the sample was grossly inefficient because of opposition to sampling techniques.

--Development of National Accounts

Technical assistance including participant training has been substantial and national accounts were established very early in the statistics program of Pakistan. The outstanding difficulty with the data is the lack of a sound infra-structure in the whole spectrum of basic statistics which are essential to achieving an adequate system of national accounts.

A National Income Commission was established in 1962 to conduct a thorough investigation in the problems and deficiencies in national income accounting. Its report proved a substantial impetus to the provision of resources to statistical work through its detailed inventory of the gaps in the statistical system.

--Census of Government Employees

A census of government employees in the Central Government and the Wings was completed in 1964.

--Census of Population of 1951 and of Population and Housing of 1961

Technical assistance in this area has been small in large part because the responsibility is in the Ministry of Home and Kashmir Affairs which has no permanent interest in demographic statistics and has essentially no statistical staff. The 1961 census of population and the census of housing appears to be largely unsuccessful in terms of

providing accurate data. Nevertheless the publication of 1961 results was immensely improved through part-time advisory services and the use of CSO expertise. Especially notable was the preservation in the Administrative Report of the tremendous handicaps and difficulties encountered because of inadequate planning.

In the preparation for the 1971 Census of Population a series of papers has been prepared for consideration of the Home Affairs Ministry. These include: (1) Detailed Estimated Time and Cost for Data Processing Equipment (2) 1971 Census Preliminary Working Table Outlines for Estimating Processing Times and Costs (3) Planning the Census of Population and Housing, 1971 (4) Major Issues for the Population and Housing Census, 1971 (5) Working Paper on Census Planning (6) Geographic and Cartographic Work to Conduct the 1971 Census of Population and Housing (7) Estimated Requirements (By Year) of major items for the 1971 Census of Population and Housing.

#### --Census of Agriculture

In addition to **contributing** to the break-through on probability sampling, U.S. support provided data processing equipment and established the principle of a post-enumeration survey. USAID advisors have also recommended pre-testing and planning procedures for the 1969-70 census. The situation here is similar to that of the population and housing since the responsibility for the agriculture census is in the Ministry of Agriculture.

In January 1968, an Agriculture Census Office was set up in East Pakistan and an agricultural census pretest covering about 25,000 farms and 60 enumerators has been planned and will be carried out during April-May 1968. At the request of the East Pakistan Agricultural Census Director, the Agriculture Statistics Advisor has devoted time in assisting in this project. The progress of the project is due mainly to the small but efficient staff of the East Pakistan Agricultural Census Office and to the cooperation received from the Pakistan Academy for Rural Development, Comilla.

--Census of Manufacturing Industries

The amount of technical assistance in this area has also been small largely because the basic responsibility in West Pakistan is in the Directorates of Industries and in East Pakistan insufficient staff support has been given. The quality of the censuses have in fact declined during the early 1960s when responsibility was transferred to the Provincial Bureaus.

--Population Estimates and Vital Statistics

The Population Growth Estimation project, a joint venture of the Central Statistics Office and the Pakistan Institute of Development Economics, has achieved worldwide recognition for its pioneering work in measuring births and deaths on a sample basis. Considerable technical assistance has been given in this field. Also notable is the step taken by the CSO and the Government of Pakistan to continue this work on an improved and permanent basis, with USAID support.

Two years of advisory assistance has been provided to the Family Planning Program to improve its capacity to install reporting and evaluation systems.

--Labor and Manpower Statistics

Considerable advances have been made in this area principally through the National Sample Survey taken by the CSO on a quarterly basis beginning in 1959. This represented the first real breakthrough  
in

probability sampling procedure in Pakistan on a national basis. It is heartbreaking to review the horrors of administrative clearance that were experienced in getting this survey into the field. The year 1959 marked the beginning of CSO's field staff and the establishment of field offices.

Statistics on employment in establishments are the responsibility of the Provincial Directors of Labor Welfare where little technical assistance has been given and the data appear to be of questionable quality.

--Foreign Trade Statistics

Substantial improvements in detail, accuracy and release dates have been achieved principally through the use of data processing equipment provided by the United States, and in the switch over to shipping bills as the source documents.

--In-Service Training Facilities

Considerable technical assistance has been given in this area and training facilities in the CSO are fairly well developed. East Pakistan is carrying out <sup>a continuing full time</sup> training <sup>and agricultural crop reporting</sup> in data processing <sup>program</sup> but West Pakistan has no in-service training program; nevertheless improved training procedures for inaugurating new surveys has recently been experienced.

--Facilities for Education in Statistics

There have been substantial improvements in the availability of academic training in statistics principally as a result of AID participant

training. Staff members of the Universities of Dacca, Punjab, Karachi and Peshawar have been sent to the U. S. for advanced degree training. When these participants return, they will contribute to improved training capability. The level of academic training is still low. The ISRT was strengthened through the services of a U. S. Advisor.

-- Participant Training

From 1952 to 1967, a total of 105 participants were sent abroad for training, primarily to the U. S. The deployment by years was as follows:

1951	1	1957	7	1963	7
1952	8	1958	2	1964	7
1953	3	1959	3	1965	21
1954	2	1960	-	1966	10
1955	5	1961	1	1967	18
1956	9	1962	1		

This training consisted of some 1300 man-months of training time, with approximately 64% of total man-months of time occurring after 1962.

Of the approximately 80 participants who have returned from training since 1952, about <sup>50</sup>~~49~~ or <sup>62</sup>~~61~~ percent are still employed in the same agency from which they were sent, and <sup>19</sup>~~18~~ (<sup>24</sup>~~23~~ percent) are employed in

a different agency but the same general field of work. The balance <sup>14</sup> (16%) are in different fields (some in very high position) or retired, dead, or whereabouts unknown.

Of the approximately 39 participants returned since 1962, 34 or 87 percent are employed in the same agency from which they were sent and 4 or 10 percent are now in a different agency but the same general field of work. Only one trainee (3% of total) is in a different field of work.

Of the 18 major divisions and branches CSO is organized into, 16 are presently headed by statistical officers trained under the U. S. AID program.

--Commodities

USAID provided a total of <sup>242,300</sup> ~~\$204,000~~, mostly in fiscal year 1958 and almost entirely for office machines to equip CSO in data processing and reproduction equipment, and Census of Agriculture in data processing and transportation equipment. There were minor purchases up to 1957 of books for the CSO library.

2. USAID/Pakistan Program for Fiscal Years 1969, 1970 and 1971.

USAID/Pakistan has a dual interest in the statistical project. In the first place it is interested in helping the Government of Pakistan and the Government of East and West Pakistan establish a coordinated

statistical system which will provide general purpose statistics of acceptable quality and covering an adequate range of subjects and which will also have the potential for meeting changing needs for statistics. This assistance takes the form of statistical services project. In addition, since USAID is assisting in the development of the country by various forms of aid, it has a special interest in statistics to plan and evaluate the impact of its assistance; it therefore has requirements for coverage of particular areas with a given level of accuracy and timeliness.

To a limited extent this requirement is taken care of by the statistical services project since part of the objectives of the project is to assist the Government of Pakistan to achieve a well-rounded statistical program. It is engaged in providing a statistical organizational set-up within the Government of Pakistan which will facilitate users' needs being given appropriate consideration. Nevertheless, one of the greatest difficulties in achieving adequate levels of quality is that users are not sufficiently aware of statistical compiling problems and therefore can express their needs only such general terms as "within 10% or "do the best you can" which are virtually useless (and may actually be harmful) as a guide to establishing effective quality controls. Moreover, it is the users and not the compilers who are best equipped to deal with

problems of coverage and comprehensiveness. A principal contribution which USAID/Pakistan can make towards a solution of this problem is to express its concern with the lack of accuracy or coverage whenever it discovers or suspects inadequate quality or missing series. For example, it is apparent that the 1961 Population Census contained serious under-enumeration and that the Census did not provide an adequate PESS to measure the biases. USAID/Pakistan should express its concern and the concern of other aid-giving agencies to the Government of Pakistan on this matter and perhaps can contribute further (as it is trying to do) by offering to fund the cost of preparatory planning to avoid similar or other difficulties in the 1971 Census.

Similarly it is common knowledge that the 1959-60 Agricultural Census contained a number of major flaws which severely limit the usefulness of the information presented; the USAID Mission can make a similar contribution to an improvement in the 1969-70 Agricultural Census. Such a contribution can also be made in regard to almost all statistical inadequacies described above, including easily recognized difficulties in statistics on crop acreage, the census of manufacturing industries, national accounts, etc.

The program of action for the statistical services project therefore includes expressions of concern or interest by USAID/Pakistan on various problems of statistics.

The other area which USAID/Pakistan intends to undertake (through the Public Administrative<sup>on</sup> Division) as part of its dual objectives in the statistics field is to assist the Government of Pakistan in fulfilling its responsibilities to provide adequate legal authority and organization for its statistical work.

3. The Statistical Services Project Program for Fiscal Years 1969, 1970 & 1971. The overall objective of the statistical services project is to provide the technical assistance for the GOP, the GOWP, and the GOEP to establish a system under which general purpose statistics of reasonable quality and covering an adequate range of subjects will become available and under which there will be flexibility to meet new needs.

The system which is so far aimed at and is in fact being established relies primarily on the CSO and the Bureaus of Statistics in the East and West Wings: (1) to carry out a large part of the statistical survey work (2) to coordinate the statistical work of specialized functional departments and ministries of the governments as well as their own work (3) to establish and enforce quality standards for all government statistical work, and (4) to serve as data processing centers for the central government and the governments of each of the wings (for both statistical data processing and for other data processing work) for

Departments and Ministries whose volume of work does not justify separate equipment installations.

A substantial start has already been made toward achieving these objectives but there are still a number of vital goals which must be met before the overall objectives may be said to have been attained even to a passable degree. The discussion which follows is an attempt to describe the goals to be achieved, specific skills and organizational changes which still need to be established, and to estimate the amount and timing of technical assistance still needed.

The need to bring statistics to a reasonable quality level. Quality (including timeliness) is the outstanding attribute of the statistical output which needs to be brought to reasonable levels. Under present circumstances and limitations of statistical authority main reliance can best be placed on creating an effective methods and evaluation function in each of the three statistical agencies. In the Central Government an embryonic methods and evaluation unit has been established. It is estimated that three more years of technical assistance by a high level survey statistician with the part time assistance of a statistical sampling advisor will be needed before this function is reasonably well established in the CSO and is effective in attaining reasonable levels of quality in the statistical work of the Central Government. Technical assistance of

similar scope and duration will also be needed in the East and West Pakistan Bureaus of Statistics. The type and amount of technical assistance needed in this area could of course be modified if the Government in the near future should rationalize its statistical organization, legal authority, and the function of establishing statistical standards.

The above estimates of the amount of technical assistance needed to establish a viable and effective methods and evaluation functions in the three Government sectors are based on the assumption that technical assistance will also be provided in three other vital functional areas which must also achieve adequate levels of effectiveness if the methods and evaluation objectives are to be achieved, and reasonable quality standards attained.

(a) Coordination

The first of these is the coordination function since even though CSO and the Bureaus of Statistics in the East and West Wings have an effective methods and evaluation function controlling quality of the statistics they compile, they do not have adequate authority over the general purpose statistics compiled by specialized functional agencies nor can they assure conformance of quality standards between the Central Government and the Government of the Wings. The framework for the

needed coordination has been set up by the Central Government in the National Statistical Council but its work needs substantial strengthening. In East Pakistan a matching Statistical Advisory Council has just been established but has hardly got off the ground while in West Pakistan no such Council has been established and is not likely to be established in much less than a year.

It is estimated that even though the Statistical Service Project will continue to support passage of the General Statistics Act, this will not be enacted and there therefore will be no important change in statistical organization or legal authority by fiscal year 1971. However, the program of action assumes passable coordination can be achieved without this act and that the technical assistance estimated previously as needed to achieve the objective of a methods and evaluation function within three years will also be adequate to achieve such passable effectiveness in this very closely related coordination function.

(b) Adequate Data Processing

The second function which is vital to the establishment of adequate statistical quality is that of data processing, and the achievement of quality objectives cannot be expected to be established unless the CSO and the East and West Pakistan Bureaus of Statistics each have effective data processing equipment installations. Without going into the technical

details the recommendation in this report are made on the assumption that the data processing equipment must become electronic at a fairly early date to take full advantage of the capability of DPE to assure statistical quality in a country where credibility checks, sampling quality control, adequate imputing (let alone arithmetic accuracy) cannot otherwise be readily achieved. It is, therefore, assumed that computers will be installed in the CSO within a year and in each of the wings within two or three years.

It is estimated that DPE technical assistance to accomplish these objectives will be required for a minimum of two years in CSO and minimum of three, perhaps four in each wing. It is recognized that the need for technical assistance in data processing may extend beyond the end of the statistical services project but it is considered that in this event a separate project should be set up.

(c) Adequate agricultural statistics other than the Agriculture Census

The third functional area vital to the establishment of adequate statistical quality is that of agricultural statistics. In almost all countries these statistics are a special area which produce very important general purpose statistics but these are largely compiled from reports from the field staffs of the agriculture agencies of the government rather than by a purely statistical organization. Agricultural

statistics are also a somewhat separate area because they require certain statistical specialization such as in crop cutting experiments which are substantially different than those used in the more purely statistical organizations.

In Pakistan there is a strong need for timely objective estimates of crop acreage and yield. Substantial progress has been made in both East and West Pakistan in developing them. From its very seasonal nature this is however a slow moving area of statistical development and it is therefore estimated that technical assistance in regard to agriculture statistics will be required in West Pakistan for a minimum of three more years and perhaps somewhat less in East Pakistan. Since the Central Government does very little statistical work in agriculture except for the Agriculture Census work carried out by the Ministry of Agriculture (discussed below) technical assistance in this area can be limited to the two Wings.

As noted previously technical assistance in the agriculture area contributes to achieving the overall objectives of improving quality, establishing the methods and evaluation function, and creating a reasonably coordinated system. A substantial part of the technical assistance in agriculture statistics is therefore a contribution to the overall objective of the quality discussed previously. Moreover,

agricultural statistics require sampling skill so that the agricultural statistics advisors also cover the need for part time sampling technical assistance.

(d) Overall problem of statistical organization

Perhaps, the most important assumption in regard to the amount of technical assistance needed and the goals to be achieved approximately within the specified period, is that in regard to the overall organization of statistical work in Pakistan. The estimates of needs for technical assistance so far made are on the pessimistic assumption that adequate legal support for statistical work, statistical standards, and statistical organization will not be effected during the life of the project but the estimates also assume that some sort of reasonable modus operandi can be achieved without this. It is assumed that some sort of reasonably effective statistical standards dependent on the methodology and evaluation functions can also be achieved; it is further assumed that some sort of fairly reasonable division of functions among the three sectors of the Government will also be maintained, always of course subject to gradual changes.

This is not an unrealistic assumption. The United States for example went through decades without clear legal authority for much of its statistical work. With the extremely difficult problem Pakistan faces of rationalizing all government functions among three government

sectors, the rationalization of statistical work and statistical organization is probably going to be gradual and evolutionary even though some other new countries have been able to achieve this objective almost immediately after independence.

It must be added that the need for technical assistance under the statistical services project should be continuously evaluated to be sure that reasonable achievement of the objectives of the statistical services project is not being substantially forestalled by the lack of effective legal authority, organizational changes, or growth of such vital functions as establishing and maintaining statistical standards.

(e) 1969-1970 and 1971 Agriculture and Population Censuses

This consideration is particularly pertinent to the problem of attaining an agricultural and population censuses of reasonable quality in the censuses of 1969-70 and 1971. Here a principal difficulty is the organizational situation which prevents effective utilization of statistical skills already available at least in part within the Pakistan Government to carry out these censuses effectively. The Agriculture and Population Censuses of 1969-70 and 1971 apparently will be carried out independently by the Ministries of Agriculture and the Ministry of Home and Kashmir Affairs (as they were for the 1959-60 and 1961 Censuses); coordination with the statistical agencies in the three Government sectors has not so far been established nor is there any effective provision for the

statistical standards and/or methodological and evaluation functions. Essentially, there will apparently be a waste of the statistical skills which have been built up in the three Government sectors.

The really poor performance of the Government of Pakistan in preparing for the 1969-70 Agricultural and the 1971 Population Censuses and the lack of lead time counsels that only an incidental part of the existing statistical services project resources be given to these censuses and that it be made clear that the statistical advisory service as presently constituted and called for until 1971 takes no responsibility for technical assistance for these censuses.

The Agricultural Census at this point does have a token office and the statistical advisory team has given it some ~~small~~ technical assistance on survey techniques and data processing. It has been made clear to both this office and the Ministry of Agriculture itself that preparations for the agricultural census have so far been inadequate and that there is not sufficient time to carry out the census presently planned at an adequate level of quality and in accordance with international standards.

If by some chance the Ministry of Agriculture requests technical assistance these facts should again be made clear and technical assistance provided only if there is a reasonable prospect that the planned scope and timing for the agriculture census are such that reasonable quality and adherence to international standards can be achieved. To be

more specific, at this point the most that seems practical if field enumeration is to start on schedule in November 1969 would be a small sample pilot census to be followed by full scale census in 1971, or preferably 1972 if the population census is to be taken in 1971. Preceding a full-scale agriculture census by a small pilot census is a type of procedure which has been adopted in other countries in which agricultural census technology is poorly developed.

Any request for technical assistance should be considered only in the light of this situation and the amount and kind of technical assistance decided on accordingly. There is apparently an obligation for USAID to provide technical assistance since FAC seems to be unable to help out.

In regard to the Population Census very little technical assistance has also so far been given. The Population Census is scheduled to be taken somewhat more than a year later than the Agricultural Census and there is a reasonable chance, if vigorous efforts are made, that an adequate census but with a limited range of questions might be carried by the scheduled date. Again if there is a request for technical assistance for the Population Census the request should be considered in relation to this situation. If no technical assistance is specifically requested the present statistical service team should provide at most incidental technical assistance and a clear indication should be given to the Ministry of Home and Kashmir Affairs that USAID/BuCen takes no responsibility for the Census.

If the GOP does request technical assistance for the population and agriculture censuses the need is difficult to predict in the light of the uncertainties described but would probably be approximately as follows:

A general survey advisor for each of the censuses, a census mapping advisor and a sampling advisor for both census combined, a data processing advisor for each of the censuses, or one for both censuses combined if the DPE of the CSO and the East and West Pakistan Bureaus of Statistics are integrated into the data processing work of the two censuses, etc. ~~Any incidental and part time help to these censuses, etc.~~ Any incidental and part time help to these censuses beyond this by the available statistical services project should be looked up as merely for the purpose of coordinating these very important censuses with other statistical work in GOP, GOEP, and GOWP.

(f) Special Purpose Statistics

This leaves the area of what may be termed special purpose statistics having only a relatively small general purpose content as illustrated by the statistical work related to Family Planning, the MONA and SCARP projects, agricultural experiments design, bio-statistics, etc. Here the objective of the statistical service project is to build up the statistical skills and organizational functions of the CSO and the

statistical bureaus in East and West Pakistan so that technical assistance needed for such specific fields is obtained from these statistical agencies.

It has to be recognized that important exceptions to this may be necessary. For example, there is need for technical assistance in the Family Planning program which cannot at present apparently be taken care of by CSO or the statistical bureaus in the wings; temporary technical assistance may also be needed in other areas such as MONA, SCARP, etc. Here technical assistance in statistics should be chargeable to the project themselves rather than to the statistical services project even though the statistical services project provides some incidental technical assistance.

In summary, the estimated technical assistance needs for the statistical services project are as follows:

	Calendar Years			
	1968	1969	1970	1971
<u>Statistical Services*</u>				
<u>CSO</u>				
Senior Statistician				
Data Processing				

\* Excludes technical assistance in the agriculture and population census of 1969-70 and 1971 and in the area of special purpose statistics. Also excludes short term technical assistance by specialists which should total each year about 1 to 3 TDYs of about 30 days from outside Pakistan.

Calendar Years			
1968	1969	1970	1971

West Pakistan

Senior Statistician

Data Processing

Agriculture Statistician

East Pakistan

Senior Statistician

Data Processing

Agriculture Statistician

Participant training needs in terms of 6-9 months periods of training for staff from CSO, EPBOS, WPBOS as estimated as follows: 3 to 4 positions over 2 to 3 years i.e. 3 to 6 participant years in the methods and evaluation and administration function. 3-4 positions over 2 to 3 years i.e. 3 to 6 participant years in data processing.

1 or 2 positions over 2 to 3 years i.e. 1 to 3 participant years in specific skills; such as agricultural statistics national accounts, or other individual subject matter fields.

#### IV. Schedule for Achieving Goals

The following is an attempt to provide a schedule to judge performance towards achieving specific goals in the Statistical Project during FY 1969, 1970 and 1971.

##### A. Bringing Statistics to a Reasonable Quality Level

1. Establish a staff function for Methods and Evaluation (including sampling).

This is partly a staff function at CSO, and the particular organizational form it takes will depend on the Director General's approach. This existing function should be more formally recognized and attached to the Director General's office. At the Bureaus of Statistics in the East and the West Pakistan Governments, methods and evaluation cells will be attached to the Director's office. Additional staff will be obtained by transferring capable persons from subject matter divisions. Target date - end of FY 1969.

2. Increase supervisory component of field staff and Central Office staff in order to provide field staff for the increased work of pretesting, PESS, reconciliation, and follow-up of non responses. The amount of increase needed will depend in part on the success obtained in increased transportation facilities for use by supervisory staff. At present at CSO

an effort is being made to obtain 19 jeeps for the 20 field offices. Vehicles for East and West Pakistan are also essential. Targets: 10% increase by end of FY 1969 in CSO and East Pakistan. There is probably no need of field offices for BOS of West Pakistan under present functions, but vehicles for pretesting and PESS work are in process of procurement.

3. Initiate system work on all series (including new series or surveys as scheduled for introduction)
  - (a) At CSO, as an example, the Population Growth Survey's regular PESS is scheduled for introduction by June 1968, first on a simple measure of enumerator variation on population count and vital events within listed structures, later to measure missed structures (December 1968) and finally to have a field reconciliation of differences between enumerator count and supervisor count (June 1969). For the other new series: Construction Statistics, Small Industry Surveys, Distributive Trade Surveys, determine sample design (December 1968) pretesting (June 1968 - June 1969). The target data when all new series would be going through systems work in CSO and in East and

West Pakistan is June 1969. (Much of the new work is already being subjected to a systems approach at least in part, over the past year or so.)

- (b) Inventory of limitations of present series and establishment of priorities to which systems approach is to be applied, June 1969.
- (c) Percent of total statistical work (including old) to which systems work will have been applied: FY 1969 (5%), FY 1970 (10%), FY 1971 (25%).
- (d) Number of statistical officers engaged in methods and evaluation staff function:
- |       |         |     |         |      |         |      |
|-------|---------|-----|---------|------|---------|------|
| CSO   | FY 1969 | (5) | FY 1970 | (10) | FY 1971 | (20) |
| EPBOS | "       | (2) | "       | "    | (5)     | "    |
| WPBOS | "       | (2) | "       | "    | (5)     | "    |
- (e) Introduction of editing procedures on new data processing: Targets FY 1968; Conversion to computer technology in systems work: CSO (FY 1969); East and West Pakistan (FY 1970-71).
- (f) Provision of methods and evaluation services by CSO and BOS's to other statistical organizations at least in part, Target: FY 1971.

## B. Organization & Infrastructure

### (1) Adequate Coordination

The principal Statistical Advisor will counsel his counterpart, the Director General, Central Statistical Office on further activities of the CSO to strengthen the National statistical system. The Secretariat functions of the CSO to the National Statistical Council should be strengthened. All advisors will participate in NSC meetings of the Technical Advisory Committee and panels and working party groups to provide guidance toward achieving program objectives. As the provincial bureaus are strengthened they should assume greater responsibility for survey and data collection operations.

In both East and West Pakistan the Senior Provincial Statistics Advisors will work with their counterparts in implementing the delayed reorganization of the Bureaus of Statistics and on promotion of greater coordination with other statistical entities to establish their positions as service agencies in areas of data collection and processing and as leaders in the pursuance of improved quality of output. In the East Wing the Senior Statistical Advisor has been appointed as advisor to the newly created Provincial Statistical Council.

The Senior Advisor will work closely with the PSC's secretariat to develop rules of procedures, relations with the NSC and working papers for the consideration of the Council. He will seek to strengthen the secretariat staff of the Provincial Statistical Council. The six newly created regional survey offices will be expanded to facilitate more timely data collection. A Provincial Statistical Council will be established in the West Wing as soon as the Bureau of Statistics has adequate resources to provide the necessary leadership, hopefully in FY 1969.

Target for an improved but still inadequate coordination function: FY 1971. This assumes the General Statistics Act is not enacted until after FY 1971.

(2) Statistical Education & In-Service Training

By Fiscal Year 1969 some of the participants from the universities and institutes who were sent abroad on degree programs will be returning to give more depth to statistical education and training. Emphasis will also be given to exchange programs and research grants for statistical department faculty members whenever possible.

CSO will adopt Household Survey Workshop technique in its in-service training program by end of FY 1969. Similar programs will be established in East Pakistan by two participants

from that Bureau. In East Pakistan's Bureau of Statistics an in-service training section is to be set up giving emphasis to improvements in clerical operations. The recently initiated in-service training program started at the East Pakistan Bureau of Agriculture Statistics should be put on a continuing basis and should expand into other operations besides field reporting. In West Pakistan the Senior Provincial Statistical Advisor and the Agriculture Sampling Advisor will urge more rigorous training standards for field personnel on regular and special surveys.

In East Pakistan the advisors will assist the Institute of Statistical Research and Training to develop research projects in fields such as population projections, health, housing, education and industrial statistics to strengthen the practical aspects of the training program. The Data Processing Advisor will continue the practical training courses in Data Processing begun at the Institute in FY 1967. Target date for an adequate statistical education and in-service training system: FY 1971.

(3) Improvement of Status and Accommodations

The Principal Statistical Advisor and the Project Director will advise the Planning Commission and the Economic Affairs Division on the establishment of a joint professional service for Economists and Statisticians. In the meantime all advisors will continue to urge that the more promising staff members be given greater responsibility. In East Pakistan effort will be made to get a professional statistician appointed to the post

of Director of Bureau of Statistics. In West Pakistan a substantial effort will be made to upgrade the status of the BOS including a Chief Officer at Secretary level as in East Pakistan.

In East Pakistan funds are provided in the developmental scheme for a new statistics building, hopefully to be completed in about two years. In the meantime <sup>1300</sup> ~~5000~~ square feet of air-conditioned space <sup>has</sup> ~~will have~~ been made available for installation of data processing equipment by early FY 1969.

Additional new space will also be added to house part of the regular Bureau of Statistics staff.

In West Pakistan improved office space for staff and for the data processing equipment may be obtained but it is likely to occur after FY 1969.

### C. Data Processing

The GOP is in the last stages of securing a third generation computer (IBM 360-30) under assistance from the Colombo Plan. The Senior Data Processing Advisor will counsel the CSO on all aspects of computer installation and operations. He will continue to counsel the CSO on installation requirements. He will develop and teach an in-service training program which will cover: Punched Card Principles, Basic Computer Systems, Systems Analysis, Cobol programming language, RPG programming language, computer operations, tape

library operations and maintenance, input/output control, assembly language coding, and editing, imputing and Quality Control. This series of training classes will occur through FY 1969. He will expand and implement the above subjects for a course to be given at the University of Karachi as part of a Degree or Diploma program.

He will advise and assist in the conversion of all existing EAM applications to the computer which includes the following steps: systems development, general and detail flow diagramming, programming, assembly and checking, testing, production. This activity will start in the fourth quarter of FY 1968, and continue to the fourth quarter of FY 1969. New applications will begin in January 1969 and continue through FY 1970.

Every effort will be made to encourage GOP and Provincial Government inter-agency cooperation and coordination to rationalize the assessment of the need for and the acquisition of data processing equipment so as to minimize cost and maximize utilization. For example, can the Agriculture Census or the Population Census be done on the CSO's or a BOS computer?

In East and West Pakistan the Data Processing advisors will teach recurring data processing in-service training programs which will include punched card principles, basic computer systems, systems analysis and development, input/output control functions, editing,

computing and quality control functions, data processing oriented forms designs, and data processing management.

They will conduct feasibility studies on the acquisition of a computer, planning its configuration and software requirements and will assist in the preparation of any justification documentation necessary to secure a grant or loan assistance. They will assist in the establishment of long range training programs to insure that personnel and software are in position to efficiently utilize the computers upon arrival.

In West Pakistan the advisor will continue to support the department of Administrative Science, Punjab University, in the development of their data processing courses, helping to upgrade the curricula to include computer systems. He will also exploit NIPA and other training programs to acquaint administrators with the advantages and uses of data processing as a staff improvement and development tool. Advice and help with planning, and training for the WAPDA data processing center will be continued. He will continue to assist in the conversion of manual applications to the existing unit record equipment.

The data processing advisor in East Pakistan will continue the program of in-service training in Fundamentals of Data Processing Operations, including wiring control panels of the equipment presently installed. The equipment, temporarily installed at the Institute of Statistical Research and Training at the University of Dacca, will be moved to the Bureau of Statistics as soon as rooms already allocated are renovated and air-conditioned. A 1401 computer was recently installed in a Bank in Dacca, and the advisor has negotiated free use of this equipment by the Bureau of Statistics and recently completed a final tabulation on this machine. Training programs for the 1401 computer are in the final stages of planning. The Government of East Pakistan recently appointed a committee for reviewing the present equipment requirements and making recommendations of expanding the present installation. The Advisor is a member of this committee. If the GOEP decides to install a computer, which is a "good possibility", the advisor will be required to conduct classes in all phases of computer technology and systems, as outlined above for the CSO. With the return of the participant obtaining a Masters in computer technology, the Advisor will assist the University in establishing a full-time Data Processing Course.

All advisors will work with their counterparts to actively promote the use of data processing equipment in place of the current practice of hand tabulation.

Target date for data processing in CSO: End FY 1970

" " " " " in E. Pak: End FY 1971

" " " " " in W. Pak: End FY 1971

(Note: Any technical assistance in DPE needed after FY 1971

would be set up in another project).

D. Bringing Statistics on Crop Yield, Acreage Production to a Reasonable Quality Level

In the East Wing the Agricultural Statistics Advisor will continue to advise and assist in the expansion of crop measurement field staff, for which 140 new positions are to be filled and staff trained. He will set up a series of quality checks on field work and estimation procedures so that greater reliance can be placed on objective estimates. He will also promote economic analytical reporting relating the results of the crop acreage and yield surveys to the agriculture development effort, by developing analytical tables and time series, and staff capability

through on-the-job and overseas training. To accomplish this and to speed up issuance of crop reports he will propose the conversion of the current hand tabulation system to a mechanically processed system that will permit classification by a number of variables.

Target date for completion: End Fiscal 1970.

In addition to these technical matters, he will also strongly urge an organizational change of the Bureau of Agriculture Statistics within the Agriculture Department so as to give the Bureau sufficient status and power to control the quality of data being collected and to exercise a higher degree of objectivity in making crop estimates.

He will demonstrate the efficiencies to be gained by tying the current agriculture estimates program in with a well-executed Agriculture Census. It is planned that this will largely be done by actual demonstration in the "Agriculture Census - Pakistan Academy for Rural Development" test census previously mentioned. Since so much initial time has been spent in the planning of this 1968 test Agriculture Census, the advisor will continue to give assistance in the analytical phase of the project so that some definitive results will be available for making decisions of the make-up of the Agriculture Census in East Pakistan whenever it is decided to be taken.

changes recommended where necessary. Field tests will be made to study variances of different sample plot sizes. Cost studies will be made to provide a basis for optimum allocation. The effect of clustering will be measured and applied to adjust past estimates of precision. Plans will be formulated for establishing a Master Sample of Agriculture. This Master Sample will emphasize measurement by ecological regions in

addition to the present requirements for statistics by administrative areas such as District or Tehsil. The plan will make provision for rotation of sample units. A program for early objective estimates of crop acreage by probability sampling will be established. Forecasting models will be established for major crops to enable objective estimates of production to be made well before harvesting starts.

At the same time it is imperative to improve the Bureau of Statistics crop acreage statistics based on administrative (land revenue) reporting system. An important tool for this will be crop acreage estimates based on the sample plan and on the field work of measuring yield by objective methods on a sample basis. These sample crop acreage estimates will act as an effective quality control and bias measurement device and will thereby increase the usefulness of the regular crop acreage statistics compilation on a full coverage basis which provide information by small geographical units such as Union Councils, and assessment circle.

STATISTICAL DEVELOPMENT IN THE GOVERNMENT OF  
WEST PAKISTAN IN 1967 AND A SUGGESTED PLAN  
FOR THE NEXT YEARS

BY  
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A. The Problems which have been and are being Faced

The outstanding problem seems clearly to be the inadequacy of many of the statistics which have been and are being compiled.

The following are some examples:

1. The West Pakistan Census of Manufacturing Industries (CMI) has been based on reports which are widely inconsistent among establishments. An outside consultant stated that "the imagination boggles" at these inconsistencies. Moreover, the statistics are substantially incomplete since non-response has been about 20% and this has not been distributed evenly over different types of industries. Finally a high proportion of the information shown in these statistics has been imputed, (i.e. guessed at) when the establishment omitted reporting particular items on the questionnaire; the imputation for some items has been 25% or more in several industries and more than 50% in at least one industry. A basic cause of all of these reporting difficulties is that there has been no pre-testing of the CMI questionnaire and it is probable that it is impractical for establishments to answer adequately a number of the questions on the form.

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\*Incorporating suggestions by a number of the USAID/Pak staff.

2. Crop acreage statistics are essentially estimates in the Sind area, and while they are apparently compiled in other areas the procedures followed are extremely error-prone and unlikely to produce statistics of reasonable accuracy; the basic difficulty is the sheer volume of the data processing work of compiling statistics and administrative information on the roughly 100,000,000 plots of land in West Pakistan even though the data itself is relatively simple.
3. Motor vehicle statistics are in many cases estimates even though users have taken them to be compiled figures.
4. A limited check on the livestock census has disclosed that there were serious conceptual difficulties in enumeration, inadequate instructions to the enumerators, and that the enumeration was very inconsistent from one mauza (village) to another with resulting wide discrepancies; there was an indication of substantial undercounting.
5. The sampling plan used for crop cutting experiments to estimate yields of leading crops is inefficient and creates biases.

Despite the fact that objective yield observations have been underway for going on twelve years, the West Pakistan Government does not recognize production figures derived from them. Instead, official annual production is estimated by multiplying the standard-

acre-yield by a seasonal condition figure and applying this to the area sown. The standard yield represents the expected yield from average soil by average farmers under average conditions. The seasonal conditional factor is subjectively determined for the particular year. The official production estimates reflect a much smaller daily per capita consumption than is generally considered reasonable. Objectively determined production is at a higher level, reflecting realistic per capita consumption.

6. Data processing equipment (DPE) has been on hand for over five years but the use of the equipment has been inadequate because of a lack of training of technicians and a lack of application of DPE capabilities to the work of the Government of West Pakistan.
7. Statistics being compiled by the Bureau of Statistics for the Department of Labor Welfare on industrial occupations are probably inadequate and misleading since the list of establishments surveyed appears to be deficient and the information has not been adequately pre-tested and scrutinized.
8. The published statistics do not generally differentiate between estimates and compiled data and do not provide a description of the basis for estimates or the type of survey from which compiled data were prepared. Measures of bias derived from post-enumeration surveys or other standard statistical

procedures for evaluating data are almost completely lacking. Users of the statistics are therefore very much at a loss as to how to use the data; a more or less predictable result is that there is widespread lack of confidence in the statistics and that some statistics are treated with less confidence than is actually warranted.

9. The 1960 Agriculture Census suffered from the major difficulty that the data as finally tabulated had to be subjected to major rough adjustments, casting doubt on many of the measurements; a census should provide reliable benchmark data but this one basically did not. (Note that the Census of Agriculture is a responsibility of the Center Government but the West Pakistan statistical advisory team is responsible for statistical advisory service to the Agriculture Census because the Census office is physically located in Lahore).

B. Basic Causes for this Situation

Without a full background on the history of statistical development in the Government of West Pakistan it is impossible to provide a comprehensive explanation for this unsatisfactory situation. Nevertheless, based on the general knowledge the following appear to be the principal causes:

1. The lack of adequate definition of what statistics an should be compiled by the Government of West Pakistan vs. the Central Government. For well over five years

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the Government of Pakistan had had under consideration a draft General Statistics Act which would rationalize and codify the statistical responsibilities of the Center and Provincial Government. The Program Agreement for fiscal year 1962 signed by USAID and the Government of Pakistan in November 1961 states that "such rationalization has long been recognized as the answer to near statistical anarchy with its resulting overlap and hiatus in collection of important data" and that the promulgation of the General Statistics Act is "pre-requisite to significant progress."

In general there has been a drift of functions from West Pakistan to the Central Government over the years leaving the statistical work in West Pakistan without a clear area of responsibility including the very important responsibility for seeing that the statistics compiled adhere to reasonable standards of accuracy. It seems no exaggeration to hold that the low quality of statistics in West Pakistan largely results from the lack of defined responsibilities and the resulting competition to get or keep a function by turning by out a publication whether or not the statistics presented are up to useful standards of accuracy; there has been a clear tendency to use the volume and appearance of statistical output rather than the content as the measure of accomplishment.

2. The administration of the Bureau of Statistics has lacked follow through so that procedures have not been implemented properly and operations have been inadequate from an administrative point of view. This has been true of survey work in all areas, i.e. manufacturing, crop reporting, and special surveys such as the special varietywise survey of rice.
3. The Government of West Pakistan, probably in large part because it has not been sure of just what statistics should be compiled in West Pakistan, has not been providing adequate resources in personnel, vehicles, office space, etc. for the statistical work undertaken. This together with the situation in 2 above, has undoubtedly acted to help the shift of functions to the Center Government.
4. There is no organizational or other provision for coordination or evaluation of Government of West Pakistan statistical work or for assuring that the methods used will provide reasonable accuracy in the statistics compiled.
5. West Pakistan has suffered a lack of attention by the statistical advisory services provided by the USAID. West Pakistan itself is essentially a very large country but the statistical services in West Pakistan has been limited to that provided by one or two advisors plus that part of the contribution the advisors to the Central Government have made to

statistical work in West Pakistan. In comparison there have been four or five or even more advisors in countries only 1/2 or 1/10 as large as West Pakistan (Turkey, Malawi, Sierra Leone, etc.) On the other hand it must be recognized that USAID has never had a clear understanding of what the Government of Pakistan and the Government of West Pakistan have intended to be the statistical functions of the Government of West Pakistan and it cannot therefore be held to be fully at fault for having provided inadequate technical assistance to the Government of West Pakistan. The USAID statistical team in Pakistan had made its greatest progress in developing the Central Government (CSO) statistical capabilities (about half of the USAID advisory services has been in the Center Government) and in establishing coordination between the East and West Wings and the Center. It is a very substantial accomplishment that Pakistan does use common classification for industries and occupations; the CSO has a very good data processing installation; important statistical surveys are being taken care of by the CSO, such as the national sample survey; statistics are being compiled for family planning, the CSO has a census of establishments underway; etc. The advisory team should perhaps have been more successful in the establishment and enforcement of quality

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standards for statistical work and in seeing that pre-testing, post enumeration quality checks, etc. were in fact carried out. The team has pressed for attention in these areas but the effort have in large part been thwarted by the lack of defined areas of responsibility within the Government of Pakistan and the Provincial Governments. It should perhaps be noted that the team's success in persuading the Central Government to provide staff, vehicles, space, DPE, etc. for statistical work in the Center Government (CSO) have been largely achieved only within the past few years; the withdrawal of AID (ICA) from cooperation with the CSO in 1958-59 of course interrupted these and other improvements.

6. Since quality is the outstanding deficiency in the statistical work in West Pakistan it is also pertinent to note that one member of the statistical advisory team made the observation in an end-of-tour report in 1962 that at the same time the AID/BuGen advisory team was pressing for quality in statistics, its efforts were undermined by the attempts of U.N. and U.S. agencies (NIH, WHO, & FAO) to carry out large scale surveys which were basically unsound. This has undoubtedly been an important impediment in the past to overcoming the attitude that "anything goes" but it presumably will be a less important impediment in the future.

7. Due to a number of circumstances the attention by the statistical advisory team to the data processing equipment work in West Pakistan has not been continuous and sustained. The equipment arrived in the West Pakistan Bureau of Statistics some five years or more ago but an advisor did not come on board for over a year and had a tour of less than two years because he was evacuated as a result of the September 1965 war between India and Pakistan; a replacement did not arrive for about nine months. Training in data processing equipment techniques in West Pakistan has therefore been slow and the use of the equipment for work in which there is an outstanding potential has not progressed with reasonable speed.
8. In West Pakistan (probably also in East Pakistan and the Central Government) the introduction of adequate statistical techniques has been handicapped by certain assumptions in regard to the Government's statistical work which has been strongly held in the past and which have not as yet been overcome. This lingering attitude is that statistics can be carried out on a crash basis without planning and that local enumerators know how to enumerate, do not need to be trained, and moreover do not have to have their work subjected to normal quality control procedures. The "crash basis" approach has among other things handicapped the objective of having survey plans meet user needs both

in terms of concepts and in the arrangements of the data as released.

9. An important difficulty in developing the compilation of accurate and useful statistics in West Pakistan is with respondents who are concerned that the information they supply may be used to their detriment. This of course is a problem in all countries and in fact probably is a relatively greater problem in West Pakistan but it should not be concluded that useful information cannot be compiled. Of the areas of statistical inadequacy listed in 'A' above this difficulty would appear to be of substantial importance only under industrial statistics. The application of more or less standard statistical techniques (reiterative enumeration, post-enumeration quality checks, probing pre-testing, etc.) would undoubtedly result in restricting the items of information which it is feasible to compile in industrial surveys in West Pakistan but there is undoubtedly a great deal of useful data which could be obtained reasonably free from excessive response bias and variance, particularly with well trained enumerators. A pledge of confidentiality is also important to getting more accurate reports and it is likely that after a period of time a more effective system than the present one will be developed for keeping the reported data confidential. Crop cutting is handicapped severely by the reluctance of farmers

to allow crop samples to be removed from the field for more accurate measuring and moisture testing. Suggestions of compensation by field assistants to farmers has been unworkable because it would lead to corruption.

10. Another major obstacle to the compiling of accurate and useful statistics in West Pakistan is the respondents' lack of records and a weakness in measurement and arithmetic. Farm operators not only do not keep records but they frequently do not apparently think of their operations in numerical terms. Smaller establishments such as truck operators, manufacturer, distributors, etc. also keep very few records and do not think of their operations in terms of the usual accounting and administrative data. These difficulties are not unusual in developing countries and they are not insuperable even though they limit the amount of useful data which can be compiled.
11. A major obstacle to developing the compilation of accurate and useful statistics over the past 10 or 15 years has apparently been an underlying, even though unexpressed, assumption that Pakistan has not really needed statistics in many areas. For example a good case can be made pragmatically that the Government of Pakistan has not in fact needed a Census of Manufacturing Industry since the statistics so far compiled have been so inadequate that any decisions made on the basis of them must have been either faulty or, if not

were successfully based on spot checks and on general observation rather than on the statistics. Similarly a case can be made that Pakistan has not had an urgent need for overall data on crop acreage and yield since, with a relatively low priority for agricultural development, the decisions which have so far been made could just as well have been taken on the basis of general observation without attempt at measurement. This attitude is apparently changing. Nevertheless in appraising the level at which further work should be done on statistical development in West Pakistan it is pertinent to consider whether there is in fact a growing need for useful statistical information in West Pakistan, whether there is recognition of this need by the Government, and whether a diligent attempt will be made to solve the problems and provide the necessary resources. This is discussed in 'C' and 'D' below.

12. There is a decided lack of understanding and mistrust of sampling methods for providing estimates of production. Perhaps the term crop cutting "experiments" in an unfortunate choice of terminology and connotes the idea that procedures are not yet established as sound. The fact that present objective procedures do not provide timely crop production estimates forces administrators into using subjective ones. There may be some motivation among policy makers not to want

estimates of actual production if these would not serve political purposes.

C. Accomplishments in 1967

1. A major accomplishment in 1967 has been in locating and defining the type of inadequacies in existing statistics described in 'A' above and in helping the Government of West Pakistan to become aware of the problems.
2. An additional development has been the resulting consideration of the problem by the Government of West Pakistan and a growing belief that there is in fact an increasing need of accurate statistics and that resources must be made available for this work. This change in attitude undoubtedly arises in part also from the type and complexity of the problems being faced in the development effort including the increased attention to achieving self-sufficiency in food, controlling population increase through family planning, and in the growing realization within the Government that increasingly difficult and complex decisions will have to be made in the industrial, transportation, and other sectors under conditions of lower levels of foreign aid and high levels of foreign exchange stringency.
3. Evidence of the efforts the GOWP is making to improve its statistics is found in the fact that it made funds available in 1967 for a Deputy Director of the Bureau of Statistics, one Assistant Director, three statistical

officers, six investigators (statistician sub-professionals) and five computers (clerks) to work on the Census of Manufacturing Industries. Since the CMI work has so far been carried out with no provision for staff in the Bureau of Statistics (and has therefore relied on borrowing staff from other work in the Bureau) the additional staff for CMI work, as it comes on board, will also permit other work to be resumed or undertaken by the Bureau.

4. Evidence of the fact that the GOWP is recognizing the inadequacy of its statistics and intends to do something about the situation is also found in the preliminary report on the 1964-65 CMI issued in November 1967 which has been prepared more carefully than in previous years and which for the first time pointed out the inadequacies of the data, (non-response, inconsistencies, imputation, etc.) The report furthermore made the commitment that these defects would be adjusted for in later reports.
5. Further evidence of the concern with improving quality is found in the agreement between East and West Pakistan and the Central Government to set up a Committee to establish quality standards for CMI statistics (non-response limits, restrictions on the extent of imputation, types of inconsistency checks, etc.) Moreover, it has been agreed to subject the CMI questionnaire to pre-testing for the first time.

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6. The Government of West Pakistan has provided the rupee equivalent of \$500,000 for improving crop yield statistics. This will, among other things, provide resources for developing a better sample design for the crop cutting experiments, as well as funds for hiring staff to do the work.
7. Plans are being considered for basic improvements in the procedures followed in crop acreage reporting. Meanwhile an attempt is being made to improve the figures being prepared under existing procedures by giving more attention to training respondents and by using the Bureau of Statistics data processing equipment to scrutinize the data reporting to locate inconsistencies.
8. A special survey of the 1967-68 acreage of winter wheat (mexipak vs. all other) is being taken with substantially increased training of enumerators, quality control procedures, and provision for check out totals; it is planned to have a post-enumeration quality check of the accuracy of the reporting. This is apparently the first time that such attention has been given to crop acreage reporting.
9. Plans have been developed, pre-testing has been carried out, a sample has been designed, and provision made for adequate training and quality control for a rural survey on land tenure, fertilizer use, labor

input, and capital formation; adequate survey standards are being observed in the preparations for this survey.

10. Substantial progress has been made in training in the use of data processing equipment and in expanding its use. Work transferred to the Bureau of Statistics equipment has resulted in an additional one-quarter of its available DPE capacity being put to use. Additional smaller jobs are being made ready to be put on to the equipment. It is furthermore hoped that one other substantial job providing for complete mechanization of information handling on motor vehicle registrations and vehicle tax payments will be put on to the equipment in 1968 and that this will not only help the Department of Excise and Taxation of the GOWP but will also provide reliable statistical data; preliminary discussions and planning for this shift are already underway and the DPE has a substantial potential in this job.
11. As a reflection of the increased awareness of the need for statistical information, the GOWP has made provision for a statistical survey of truck and bus operators. In accordance with the increased emphasis on quality this survey has undergone a very substantial amount of pre-testing with resulting basic modifications of the questionnaire, the sample design, the scope

of the inquiry, etc. The ill effects of the past practice of plunging ahead on a crash basis are apparently being avoided.

12. The procedure for getting data on motor vehicles on road has been revised so that the estimated figures will be separately reported.
13. The pressure by the statistical advisory team on those responsible for the Agriculture Census for adequate planning and lead time has been an important reason for the National Economic Council having approved the plan to have the Census, the start of a vigorous effort to set up an Agriculture Census office in Dacca, and action being started to assemble resources to undertake pilot surveys, testing, and planning for the Census.

D. Goals for 1968 and Subsequent Years

The most urgent matter is to bring the quality of statistics to a useful level and to establish organizational institutions which will provide reasonable assurance that such quality standards for West Pakistan statistics will be sustained and that changing needs for statistics will be met. Furthermore, it is equally urgent that the use of data processing equipment be applied to the statistical work in a manner which will support the effort to improve the quality of the statistics; this will of course also provide a viable data processing service agency for the GOWP.

It is a matter of substantial regret that there has been no rationalization and codification of statistical responsibilities within the Central and the Provincial Governments, since this continued uncertainty is bound to limit what can be accomplished by the statistical advisory services. A basic question in regard to the scope and duration of the statistical advisory service currently being extended to the Government of West Pakistan is therefore whether or not this service will be largely wasted by further attrition of the statistical functions of the Government of West Pakistan by a continuation of the drift of functions to the Central Government. Since during 1967 the Government of West Pakistan has in fact shown substantially increased interest in improving the quality of West Pakistan statistics and in improving the use of data processing equipment it seems safe to assume that it will support statistical development in West Pakistan to an extent which will justify the continuation of the statistical advisory service at about its present level for the next several years.

It should nevertheless be clearly recognized that the statistical advisory service in West Pakistan is nearing completion and that an optimum amount of technical assistance in the West Pakistan statistical work will have been extended within a few years if the level of assistance is sustained at current levels and if there is continued support of statistical development by the GOWP. It should however, also be recognized that if the General Statistics Act is promulgated the statistical responsibilities of the Government of West

Pakistan would become somewhat broader and that some increased attention to statistical advisory services in West Pakistan might then become necessary for a transition period.

Realistically however there seems little likelihood of the General Statistics Act coming into effect in the near future since the statistical work in Pakistan is subject to the same pulling and hauling which is taking place in regard to other functions both within the Center and Provincial Governments and among them. Pakistan will therefore apparently go through a period of years, perhaps decades, of an evolutionary rationalization of its statistical work similar to the period from, say, the 1900's to the 1940's in the United States, and any statistical advisory services beyond the next few years will therefore be sporadic rather than sustained.

Over the next few years it can reasonably be assumed that there will be important improvements in statistical quality in West Pakistan and important gains in the use of data processing equipment and that the extension for several years of the current level of statistical advisory service will be of substantial assistance in achieving the overall goal of bringing the statistics to a useful level of quality and of establishing organizational institutions which will assure that such quality standards will be sustained. The specific objectives which can reasonably be expected to be achieved within a few years will be as follows:

1. Organizational provision within the Government of West Pakistan (presumably in the Bureau of Statistics)

for a reasonably effective evaluation, methods, and coordination function. Within the next year it should be possible to start this function going (using new staff which the Bureau is acquiring) by establishing a Provincial Statistical Advisory Council representing GOWP departments both as compilers and as users of statistics. Any attempt to establish such a Council in the past year or so would have been impractical because of the lack of staff in the Bureau of Statistics. The intention is that the organizational provision for the evaluation, coordination, and methods functions is the most effective means for improving the quality of all statistical work in the GOWP.

These developments should result in many, if not most, statistical reports by GOWP containing a measure of errors and biases in the data in the report. An adequate level of useful accuracy in statistics may well be achieved even if the statistics contain biases if built-in measures of biases are provided. Every table in the six-foot shelf of reports for a U.S. Population Census is biased because of undercounting, i.e. missed persons. This undercounting is trivial in most tables but it is very important in others. For example 15% or more of male non-whites in the 15 - 44 age groups are missed in the Census. The Census is nevertheless at a reasonable level of accuracy even in the detailed tables because a measure is provided of the biases.

The provision of such measures of error or bias is much more practical than obtaining complete accuracy in every figure in statistical reports. It can therefore be anticipated that this will be one of the earliest practices to improve the adequacy of West Pakistan statistics. The mere existence of such measures will of course be a substantial incentive for eliminating them, if this can be done, in some practical fashion. The United States, for example, is spending a very substantial amount of resources in preparation for the 1970 Census in trying to find out how the undercounting of the population can be reduced in a practical fashion.

A related development in West Pakistan should also be more adequate descriptions of the basis on which estimates were made and of the method followed to obtain compiled data; this in itself would be a major improvement in the usefulness of the statistics.

2. Fully effective use of the existing/conventional data processing equipment to be achieved within 1968 with arrangements made even before then for the acquisition of the computer equipment which will be needed to permit the Bureau of Statistics to continue to provide statistical services and a central data processing function for the Government of West Pakistan that is even more effective and viable than at present. This acquisition of computer capability will presumably

also permit early experiment with the use of optical mark scanning equipment to solve the very difficult problem of compiling crop and other information on the 100 million plots of land in West Pakistan and possibly in other areas such as motor vehicle tax records. The use of the Bureau of Statistics as the computer data processing center for those departments of the Government of West Pakistan which do not need their own computers will have the substantial advantage of using the skill in data processing equipment systems work already acquired in the Bureau in part by its acting as a data processing center for the GOWP on conventional equipment.

As in other countries the Bureau of Statistics is also a most appropriate organizational unit to assume a centralized computer processing function since it can quite readily adjust statistical priorities to fit in with the urgent priorities of other Government departments thereby serving as a more effective DPE service center. Furthermore, statistical work by its nature is dynamic and as in other countries, becomes an outstandingly effective medium for the introduction of the new techniques required by the computer.

3. Provision for an increase in the status of the Bureau of Statistics and provision for effective administration both of its statistical function and of its rapidly growing function of providing a DPE centralized service

to the Government of West Pakistan. This will be particularly needed after the Director of the Bureau of Statistics returns from a U.N. assignment in Africa in July 1968 at which time it will probably be agreed that it would be best for him to undertake responsibility for staff-type functions and for the current Acting Director to undertake responsibility for administration and operations; the areas in which he has shown excellent capabilities during the absence of the Director. An adequate provision of higher level /a Director, perhaps at CSP level, would then be needed for overall supervision and this would automatically provide an increase in organizational status for the Bureau as a whole.

4. Improvement in office space for the statistical office particularly for the data processing equipment. It is poor practice to house data processing equipment which is very susceptible to damage by dust, in offices, where the entrance is unpaved and therefore alternatively dusty and muddy. It is furthermore important to house the data processing equipment in airconditioned space (even if an improved entrance is provided) since dust is common throughout Lahore and this together with heat and humidity create important maintenance problems even for conventional DFE equipment. While the equipment company <sup>has</sup> put the machines in running order during the later part of 1967 it was difficult to prod

the company into doing this when much <sup>of</sup> the problem was caused by the unsuitable office space; airconditioners should be installed at an early date to avoid machine operations deteriorating to the very inadequate levels of early 1967.

5. Further important improvements in crop cutting experiments to provide crop yield data, with the data processing part of work being done by the Bureau of Statistics; the related crop acreage statistics would also be compiled by the Statistics Bureau as at present. The Government of West Pakistan has already provided resources to have the crop cutting and yield estimate functions carried out but there remains the objective of making sure that the procedures used will be adequate to assure quality; it must be recognized that in most countries adequate crop yield statistics usually take a minimum of 3 - 5 years to develop.

Sampling plans have been changed by the Department of Agriculture, Government of West Pakistan beginning in Rabi 1967-68 (under the stimulus of the advisory team) to increase efficiency, accuracy, and timeliness of crop yield estimates. It is planned to commence validation surveys in 1968 to measure the effectiveness of these crop cutting surveys. This should provide support for adoption of these methods upon which to base production estimates. Plans have been formulated

to start collecting forecast yield data for the 1967-68 Rabi wheat crop. It takes a minimum of 3 seasons to build up a forecasting model, but the importance of being able to predict yield a month or two before harvest is obvious. Similar forecasting model building is planned for rice, cotton, maize, and sugar cane. Processing of crop yield data will be done by the Bureau of Statistics which is also compiling crop acreage statistics mechanically.

The Bureau is exploring ways to improve the timeliness and reliability of acreage reports through various means. The mechanical tabulation of acreage offers the opportunity to provide an improved sampling frame for making preliminary acreage surveys and for sampling crop yields. It is planned for the GOWP Department of Agriculture with the help of the Bureau of Statistics, to develop a Master Sampling Plan for agriculture based upon crop acreage, rainfall, irrigation, soil conditions, and other ecological information. In unsettled areas, separate sampling frames will be established. Eventually, intentions of farmers to plant, planted acreage production forecasts, and final production and utilization will be estimated objectively with known confidence limits.

6. An Agricultural Census, of whatever scope which is determined to be necessary, should be well underway

and perhaps nearing completion and there will have been adequate resources and lead time to provide pre-testing, planning and quality control activities assuring reasonable accuracy in the Census results. It is possible that the scope and timing of the Census will be such that it will be necessary to increase the level of the statistical advisory service to assure an adequate census.

It will perhaps provide a useful measurement of progress toward these goals to periodically keep track of the number of difficulties in the statistics described in Section A of this report which have been taken care of. It will obviously be more subjective to attempt to measure progress in organizational change necessary to assure sustained quality and flexibility to meet new demands for statistics.

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# Progress Report on Statistical Services in East Pakistan, 1961-1967

By

J. Hugh Rose

## I. Background

### 1. General Purpose

The project was designed to build a viable statistical system in East Pakistan in which coordination of effort on the part of the various statistical organizations would eliminate the recognized deficiencies in scope, timing, integration and quality of statistical series. The role of the advisors was to counsel the key agencies on techniques and methods of achieving the desired improvements and to provide on-the-job training and training through the Mission's participant training program.

### 2. Key Agencies

The key agencies with which the advisors have worked are:

- (1) The Bureau of Statistics attached to the Planning Department;
- (2) The Bureau of Agriculture Statistics of the Department of Agriculture;
- (3) The Institute of Statistical Research and Training of the University of Dacca.

Secondary to the above but still important to the well-rounded development of statistics have been the parent agencies, i.e., the Planning Department, the Directorate of Agriculture and the Department of Statistics of the University. Efforts to achieve coordination have involved other government agencies having statistical operations, such as Labor, Health, Commerce and Industries, Food and Agricultural Marketing Directorates, EPAIC, Basic Democracies, Family Planning, etc.

### 3. Advisory Staff

Advisors assigned to the project have amounted to approximately 15 man-years for the 7 years. They are as follows:

- a. General Advisor: October 1960 - January 1965
- b. Research and Training Advisor: November 1963 - November 65
- c. Senior Provincial Advisor: February 1965 - Present
- d. Agricultural Statistics Advisor: February 1966 - Present
- e. Data Processing Advisor: March 1965 - Present

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II. Major Target Activities and Courses of Action Under AID

1. Strengthening Key Agencies

The courses of action in this activity include:

- a. Budget support for expanding staff and improving existing series;
- b. Development of coordination between Provincial agencies and between the Center and the Province to eliminate duplication of effort and strains on scarce resources;
- c. Redefine the functional role of the Bureau of Statistics relative to Planning Department and other Provincial Statistical agencies;
- d. Coordination of developmental schemes in the field of statistics;
- e. Reorganization of staffs for more effective management;
- f. Improvement in salaries and working conditions;
- g. Improvement in provision of supplies and equipment.

2. Developing capability in Data Processing

- a. Acquisition of better equipment for the Bureau of Statistics and extending the use of data processing to other statistical agencies;
- b. Better scheduling and introduction of work measurement records;
- c. Improvement in programming and operating skills (see Training);
- d. Introduction of quality and production controls;
- e. Maintenance standards and better housing for equipment.

3. Expansion of Training Facilities

- a. Provision of participant training opportunities through US AID or other donors;
- b. Selection of trainees on the basis of merit;
- c. Strengthening local training facilities by offering advanced academic training to teaching staffs in the local university statistics departments or institutions;
- d. Encouraging development or improvement in on-the-job training for:
  - (1) Specific survey projects;
  - (2) In-servicing training at the Institute;
  - (3) In-service training section in the Bureau of Statistics;
  - (4) Practical on-the-job training courses in data processing;

4. Introduction of New Statistical Series and Improving Quality of Existing Series

- a. Evaluation of statistical gaps by working with the Planning Department to determine statistical needs in the area of development planning;
- b. Introduction of new series or ad hoc surveys to meet such needs;
- c. Development of recurring series to replace unrelated ad hoc studies;
- d. Introduction of statistical standards, quality controls and evaluation of new and on-going projects;
- e. Develop the use of sample designs to provide optimum reliability - cost relationships;
- f. Improve quality of compilation of data from secondary sources;
- g. Develop efficient schedule design and field survey procedures through pre-testing and post-enumeration quality checks;
- h. Use of more training and closer supervision in all data collection activities;
- i. Encourage more careful analysis of surveys results.

5. Improvement in Publication Programs

(NOTE: Statistics gathered but left unpublished or published two years after the date to which they apply have little or no value in economic planning and development. The Government Press gives low priority to recurring statistical publications with the result that the Bureau of Statistics does not keep the compilations up to date, e.g., the "Monthly Statistical Bulletin" is two years behind at the Press and compilation is about a year behind. Several courses of action have been tried).

- a. Obtaining funds in one of the developmental schemes for acquisition of offset press equipment;
- b. Streamlining the publication program by eliminating less useful series or whole publications, such as the Statistical Abstract which is over five years out of date.
- c. Developing a mimeographed release for more important economic indicators.
- d. Encourage the elimination of back issues and concentrating on getting out current issues on time.

6. Development of Phased Programs of Periodic Censuses to Provide Benchmark Inventories of Human and Economic Resources

(NOTE: The three major decennial censuses, agriculture, population and housing, are the responsibilities of the Central Ministries of Agriculture and Home and Kashmir Affairs. In so far as these operations are decentralized the Provincial Advisors provide assistance to the Central Government Advisors).

- a. Assisting in the planning for the 1970 and 1971 decennial censuses of agriculture, population and housing.
- b. Improve the coverage, quality and timeliness of the Annual Census of Manufacturing Industries.
- c. Assist in the development of a quinquennial small industries survey.
- d. Develop a Census of Commercial Establishments (wholesale, retail and services) for 1969.

III. Accomplishments Toward Major Objectives

A. Strengthening Key Agencies

1. Budget support has been obtained only in the form of developmental schemes in the Second and Third Five-Year Plans but no changes have been made in the Revenue Budgets of any of the key agencies. The following developmental schemes were approved (see budget and personnel detail in attachments A, B and C):
  - a. Establishment of a Bureau of Agricultural Statistics (BOAS) in the Agricultural Directorate, 1961-62;
  - b. Established the Institute of Statistical Research and Training, 1962-63;
  - c. Ad Hoc Sample Survey Organization for the Bureau of Statistics (BOS), 1962-64;
  - d. Rental of used IBM data processing equipment for the BOS, 1964-65;
  - e. Expansion of field inspection staff for the BOAS, approval of 1965 but no implemented until 1967;
  - f. Establishment of permanent regional and field offices for the Sample Survey Organization of the BOS, approved in 1966 and implemented 1966-67;
  - g. Acquisition of new modern IBM data processing equipment for BOS, approved in 1965 and implemented 1966-67;
  - h. Approval of building funds for a statistics building, approved 1965, now being drawn upon to provide air-conditioned space for data processing equipment;

2. Development of inter-agency coordination has been accomplished by creating a Provincial Statistical Council (PSC). This was started in 1965 by the establishment of a Provincial Statistical Committee on an ad hoc basis, but due to the Indo-Pakistan war and subsequent budget problems, it was not effective. The formal establishment of the PSC was not completed until November 1967. The Council membership, patterned after the National Statistical Council, consists of 23 Secretaries or Directors of agencies having some statistical functions. The Council functions include development of statistical standards, resolution of overlapping statistical functions, development of coordinated short and long term programs for individual agencies, support of adequate budgets, liason with the NEC for coordination of national and provincial programs, etc. The BOS serves as the secretariat for the Council and it is planned to have it increasingly act as a service bureau in field data collection and data processing for other agencies.
3. The role of the BOS relative to the Planning Department has been clarified by encouraging the former to plan its program more around statistical needs for economic planning by establishing joint projects such as the Manpower Research and the Economic Indicators Projects, both to be supported by local currency research funds. Organization of the PSC was largely a result of closer cooperation in matters other than purely administrative.
4. The BOS as a unit of the Planning Department reviews all proposed developmental schemes involving other agency statistical projects. This coordinative function has been largely passive to date, i.e., little effort has been made to propose appropriate schemes.
5. Efforts to streamline the BOS staff into more functional divisions of responsibility have resulted in only minimal changes (see section "Evaluation of Problems" below).
6. No improvements in salaries have been made but some improvements in working space have been achieved. All units of BOS are or soon will be, in close proximity in the Secretariat although some are still located in sheds. The Data Processing Section is temporarily in air-conditioned space at the University, but space at the Secretariat is being renovated.
7. Except for the data processing, equipment is generally poor and inadequate in quantity in all statistical units. Desk calculators and adding machines are limited to a few old hand-powered machines. Paper and supplies are of very poor quality and limited in amount. File cases are practically non-existent.

#### B. Development of Data Processing Capabilities

1. As indicated earlier under the guidance of the Advisors BOS has now built up its inventory of data processing equipment into a unit record system capable of meeting current needs. It can be expanded to meet increasing demands or it can serve as supplementary equipment for a computer installation in the future (not recommended in the immediate future).

2. Scheduling of work has improved utilization which was less than 25 percent in 1965 is now approaching 100 percent of a one-shift day. Part of this utilization involves use of equipment for training. Fuller utilization (2 or more shifts) will depend upon the rate that subject matter sections in BOS and other agencies provide a regular flow of raw data. The Data Processing Advisor has introduced work measurement records and is establishing performance standards as criteria for continued participation in machine operations. Personnel who cannot meet standards are assigned to coding or other clerical operations.
3. All data processing personnel have, or are attending, training classes conducted by the Advisor.
4. Maintenance of equipment free from dirt and humidity has been achieved by training in keeping machines and space clean and by installing the equipment in air-conditioned space. Working through the management of the Institute of Statistical Research, the Data Processing Advisor secured in 1967 space and air-conditioning for both the BOS and the Institute equipment. The BOS equipment will be moved to the Secretariat as soon as similar space which has been secured there is renovated into a modern machine room.

#### C. Expansion of Training Facilities

1. US AID has sent 17 participants for training in the U.S. since 1960. All of the returned participants are still directly engaged in statistical work although not all are working in the specific field of statistics for which they were trained. Seven of them are still in the States completing their training. Two participants studied under the Colombo Plan in U.K. (1964 and 1965) and one in Canada in 1966.
2. In 1967, selection of candidates for training was based primarily on merit (based on intensive interviews) rather than seniority or other factors.
3. Academic training leading to graduate degrees have been provided to two participants from the ISRT at Dacca University and a third is expected to start in 1968.
4. Efforts to improve on-the-job training have included:
  - a. One person trained for organization and implementation of Training Section in BOS;
  - b. Two persons trained in conducting Survey Workshop training classes;
  - c. Efforts have been made to improve training procedures for specific surveys or projects. This still needs much strengthening specifically in the preparation of training manuals;

- d. The Data Processing Advisor has conducted a series of training classes at ISRT in general use of data processing equipment, card punching and machine operation. These classes will be given at increasingly advanced levels. During 1966-67 six such series have provided training for 58 persons. Each class lasts about four weeks.
  5. The ISRT regular training classes have grown from a registration of about 30 pupils to over 90 this year. Junior and senior certificates are offered in afternoon and evening classes to Government and private workers.
  6. Due to lack of budget primarily (inertia also is a factor) no formal Training Section has been organized in the BOS although planned for the past three years.
- D. Introduction of New Statistical Series and Improvement of Existing Series (See also Attachment B)
1. Some spotty evaluation of statistical gaps has been done but no formal plan for filling these has been set forth. The Economic Indicators Project (to be financed by Sec. 402 research funds) in an effort in this direction but is awaiting EAD approval. Similarly the Skilled Manpower Research (including Provincial Income Estimates) Project will contribute when approved by EAD. The PSC proposal to work out coordinated short and long range programs for all agencies is expected to result in an evaluation of gaps and establishment of a phased procedure for filling them.
  2. Since 1964 a series of surveys of characteristics of rural households have been conducted through the BOS Sample Survey Organization. Only one of them is a recurring survey. Another recurring survey covering the period since 1961 is the Survey of Building Materials. Although producing quarterly data, the actual survey usually covers over four quarters or more at a time. Henceforth it is expected to be done each quarter.
  3. In 1961-62 with the formation of the Bureau of Agriculture Statistics objective crop acreage and yield measurements were introduced by the Advisor for the major crops. This work has been expanded and improved until now the Government uses the objective estimates as "official" instead of the eye estimates of the past. Plans are in process for extending the objective estimates to minor crops. The Secretary of Agriculture has appointed Technical Committee, including two of the Advisors to formulate these plans.
  4. In the field of price statistics, wholesale and retail prices are collected by a number of agencies with considerable overlap and lack of comparability. Two very limited coverage cost of living indexes are prepared regularly in the Province. Plans to improve

and expand these to additional urban centers are in process. A Consumer Expenditures Survey is in the preliminary stages which will provide a "market basket" standard against which to compute cost of living changes in the principal urban centers. Little improvement has been made in price series, except some effort on the part of BOS to standardize commodity specifications.

5. Only in the field of objective crop acreage and yield estimates has any significant work been done on introducing statistical standards, quality control and post-enumeration quality evaluation. The Agricultural Statistics Advisor, working with BOAS, has introduced use of more precise estimating procedures, increased use of field inspection work, training in crop-cutting sample selection and small follow-up evaluation studies. Development of a field inspection staff of about 150, now underway, will make it possible to increase use of quality controls.
6. Use of better sampling methods is being gradually introduced in the crop statistics, construction material surveys and rural household surveys. New sample designs were worked out for the latter two in 1967 to reduce costs and increase efficiency. The use of improved sampling needs to be applied in areas such as prices, industrial production, etc.
7. An area of statistics much in need of improvement is that of vital statistics. Recording and reporting of births and deaths is covered by a Registration Law which is not enforced with the result that probably less than 40 percent are reported. The Senior Advisor has been working with the U.S. National Center for Health Statistics to develop a two-year research project on improvement in registration procedures. It is expected that this project will be started in 1968.
8. Little effort has been expended on improving quality of compilation of data from secondary sources since the publication of these data has a lag of about two years. With the implementation of the Economic Indicators Project, any series included will be evaluated and improved in quality at least to the extent of pointing out the limitations of the data.
9. Progress is hard to evaluate quantitatively in improvement of schedule design and field surveys procedures. All the advisors work on the former and have achieved some success. Some simple pre-tests have been introduced but little has been accomplished in post-enumeration quality re-checks because of lack of funds, time, inadequately trained staff and poor supervision.
10. Training of staff for specific projects and field supervision are the weakest elements in all data collection. Possibilities of training improvements through the workshop method are good although time and staff will still be problems. Field supervisors lack motivation

for overcoming difficulties of travel in the rural areas. The traditional role of the supervisor sitting at a desk waiting for the enumerator to bring materials to him is hard to break down.

11. The Statistical Officers need more training and experience in writing concise and meaningful analytical reports. Inadequate delegation of responsibility for prompt and careful report writing is also a serious problem. Each report has to be cleared at a high level and is generally rewritten in the process so that the writer has little incentive to do original work.

E. Improvement in Publication Programs

1. A development scheme for acquisition of offset press facilities was prepared in 1965 but due budget deficiencies approval was postponed. The scheme will again be submitted to the Planning Board this financial year. A trainee has been sent to the States for training in this field.

2. Efforts to eliminate bulk issue of priced publications in order to concentrate on current issues or elimination of the Statistical Abstract and other marginal publications have not been successful against the administrative barriers to such actions.

3. As an alternative, the local currency project, Economic Indicators, was proposed as an interim measure to provide the more significant series in mimeograph form on a timely basis. Even though the project is not yet approved the BOS has produced two quarterly mimeographed reports to test the problems. They will be expanded and improved under this project. It is assumed that with the acquisition of press facilities, the regular publications will be up to date at the termination of the project.

4. A simplified annual "Statistical Digest" has been published by BOS for the last three years (about one year late) in lieu of the abstract, although compilation for the latter still continues.

5. A mimeographed release for limited distribution on weekly prices has been issued for the past two years as a substitute for the "Weekly Bulletin." This release is now also about six months out of date due to failure by the GOEP to fix publication price.

F. Development of a Phased Program of Periodic Censuses

1. Work on the major decennial censuses of Agriculture, Population and Housing by the Provincial Advisors has been limited to:

a. Assisting the Principal Statistical Advisor in developing content of the censuses;

b. Some work on sample design for the Census of Agriculture;

- c. Assistance to the Ministry of Agriculture in establishment of an Agriculture Census Regional Office;
  - d. Developing an Agriculture Census schedule design and planning a series of pre-tests;
  - e. Experimental work in delineating metropolitan areas in East Pakistan for the Population and Housing Censuses;
  - f. Sending a Geographer from University of Dacca to the States for training in census mapping.
2. The Annual Census of Manufacturing Industries (CMI) was started in the Province in 1962-63. Since that time data have been collected for 4 more years. Tabulations have lagged with two completed and a third nearly done. A program for bringing them all up to date by the end of calendar year 1968 is underway. The difficulties in past have been to get accurate responses and complete coverage. With the establishment of Field Offices personnel interviews are now being used for reconciliation call-backs and coverage.
3. As part of the Economic Indicators Project it is proposed to collect monthly industrial production data from a sample of industries. This will eliminate the necessity for an annual CMI.
4. The East Pakistan Small Industries Corporation conducted a Survey of Small Industries in 1962-63 to cover establishments too small to be included in CMI. This survey is believed to have been limited in coverage and it over-lapped the CMI in some cases. The BOS plans to do a similar survey covering 1967-68 but coordinated with the CMI. In preparation for this and other purposes the BOS made an establishment list by size of establishment from which a sample of small industries can be drawn.
5. The above establishment listing will also be the basis for doing sample censuses of retail and wholesale trade and services. These are tentatively scheduled for 1969.

#### IV. Evaluation of Programs and Problems

##### A. General Evaluation

It would be over-optimistic to assume that the accomplishments listed above have supplied the impetus necessary for the East Pakistan statistical system to move into the "take-off" phase. They have, however, been directed toward correcting some of the more obvious flaws in statistical programs and in the framework of administrative rigidities inherited from pre-partition times and characterized by extreme fragmentation of effort. Under the present system some of the accomplishments tend to be patchwork. They have not remedied the basic defect of the lack of a central authority to (1) impose standards of statistical activity, (2) set

levels of personnel competence, (3) enforce coordination of effort, (4) plan effective budgets and (5) demonstrate that without an effective statistical system, developmental planning is largely done in a vacuum. While the establishment of a Provincial Statistical Council is an attempt to provide such authority, without legal backing interagency jealousy and inertia may partially nullify its effectiveness.

The counterparts with whom the Advisors work are not of a sufficiently high level to bring about the kind of changes needed to rectify these defects by direct action. The Statistical Team has concentrated on (1) getting budget support through developmental scheme, (2) devising ways of increasing inter-agency coordination and (3) inaugurating or improving individual statistical series. The last of those approaches is based on the promise that the provision of some high quality statistics will demonstrate to the planning and administrative officials that better statistics can lead to better decisions and thereby create the demand for more quality statistics. The difficulty with this approach is that given the diversity of statistical operations, lack of trained manpower, lack of motivation for improvements and administrative inertia, the advisory team must expend too large a proportion of their time in direct participation in improvement work rather than in guidance. Consequently while many actions have been taken to increase cooperation, introduce better techniques and train personnel, and the like, the GOEP has not yet given evidence of strong and widespread support for changes in the system. Statistics still has a low priority in developmental planning.

#### B. Principal Problems

While the East Pakistan Statistical Service Project has made relatively good progress, particularly in the last year or two, there are a number of critical areas as indicated in discussion of accomplishments in which lack of progress can be traced to specific types of problems. Most of these are administrative in nature.

##### 1. Supervision

This problem exists in all levels of the key agencies.

- a. The Director of BOS is a CSP who typically serves one year or so before being transferred to another post. In between appointments of a CSP, the Head Statistician acts as Director. This constant change makes a difficult problem in continuity of policy, particularly since the Head Statistician is not a well-qualified administrator. There are some operational advantages in terms of high level contacts in retaining a CSP as Director, therefore efforts have been made to get a technically qualified person (non-CSP) as permanent Deputy

- Director, Since the Deputy Director's post carries relatively low pay, no qualified person has been found. Another possibility would be to recruit a permanent additional Director as second in command. This would have to be budgeted through a developmental scheme which might lack the necessary permanence.
- b. The Deputy Director (Stat) of the Directorate of Agriculture is in charge of the Bureau of Agricultural Statistics. The person in this position when the Bureau was organized was sent to the States for his Doctorate. Upon return, his substitute, had managed to get a permanent appointment so the less well-trained man remains incharge.
  - c. When ISRT was organized the Director was a former Head of Statistics Department of the University. While technically well qualified, he had little interest in developing an active research program. Consequently the advisory team urged the appointment of the current Head of the Statistics Department who accepted with the provision that as full professor, he would coordinate the work of the Department and the Institute. When the University authorities failed to implement this provision, Dr. Atiqullah resigned after one year and the senior Research Officer is now Acting Director.
  - d. Second level supervision - This is largely non-existent on a formal basis. The Head Statistician in the BOS is charged with coordination and as such exercises some technical supervision but administrative supervisory matters all go to the Director. A similar situation exists in the BOAS.
  - e. Third level supervision or lower includes the Statistical Officers heading the various sections. Generally these officers have relatively little authority to impose performance standards except in data processing where the advisor has taken an active role in setting up such standards. Time schedules when used, are rarely met. Lower level supervision, field survey supervisors for example, is simply not interpreted as such. These people lack motivation in terms of salary or travel expenses and generally wait at some central point to collect schedules from the enumerators. In the BOAS the expansion of field inspection staff will strengthen supervision when fully implemented. Low salaries (Rs. 145 per month) may also discourage effective work here since the inspector will be required to travel extensively within his thana.

## 2. Lack of Advancement Opportunity

The traditional division of civil service into a series of classes from the elite CSP down to the peon and the fairly rigid boundaries between classes make it almost impossible to enter the service at

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a low level and proceed through successive steps to more responsible positions. Many civil servants remain at about the same level as appointed, although seniority may mean some improvement with a broad class of gazetted or non-gazetted officers. This means that there is little motivation to do a better job. Furthermore those working under developmental schemes budgets have no permanent tenure if the development scheme is not extended. On the other hand lack of motivation also stems from the fact that once appointed an employee is not removed from the service for inefficiency since no true ratings are made.

3. Shortage of Equipment

a. Office Machines

Calculators are limited largely to hand operated machines. Those in working order are relatively scarce and generally serve also as adding machines. There are a limited number of typewriters; because of that and the fact that most typists are poorly trained, much work is hand-written.

b. Files and File Space

Files are generally limited to wooden cabinets and a few open wooden shelves. File materials are kept in ribboned folders which are frequently stacked in corners. No filing system is maintained.

c. Paper, pencils and other supplies

Available paper is of poor quality, Ball point pens are frequently used instead of pencils since there are no pencil sharpeners. Pins are used in place of paper clips. A hole punch and string serve in place of staplers. While shortages in standard supplies are not critical to production of good statistics, they do lead to much loss of time.

d. Reproduction facilities

Limited to about one antique mimeograph machine per agency. Shortage of paper makes these ineffective part of the time.

e. Transportation

In BOS, no transportation is available to six regional offices, although there are two jeeps available in headquarters. Supervisors in the other 12 field offices could effectively use bicycles to cover their territories.

4. Functional Reorganization and Delegation of Authority

- a. At least two deputy directors are needed in the BOS to spread the second level supervision. Currently only the Head Statistician, who should be in a staff rather than a line position is the only one having such responsibility. Three deputies were requested in the Third Five Year Plan developmental schemes, but only one was approved. This post has not been filled; another problem is that the post was assigned to Data Processing, where there is little need for a deputy until more sophisticated equipment is required. The Planning Department Administration has not approved changing the designation to a general deputy.
- b. Delegation of authority should be given from the Director to the Deputy Director(s) and from the Deputy to heads of the various sections of BOS. Currently the Director spends much of his time signing everything from leave slips and building passes to the most formal documents. The Director and the Deputy Directors, if any, should devote more time to policy and technical matters with routine administrative matters taken care of by the administrative assistants and heads of sections.

5. Budget Problems

- a. The budgeting for statistical development is based on schemes approved for the current five-year plan. The actual funds available result from an annual review by the Planning and Finance Departments and in the past three years have been for less than 3/5 of the approved 5-year schemes. No annual budget was approved for 1965-66. In years when Annual Development Budgets are approved, funds are not available until the fiscal year is half gone so that actual spending falls short of the amount budgeted.
- b. The revenue budget changes very little since the Government assigns all expansion to development budgets which can be cut back more readily. Employees are either paid from one or the other and cannot be shifted readily. For example, Data Processing is now divided into two groups (1) former operators of the ICT discarded equipment who work under the Revenue Budget and (2) operators of IBM equipment under the Development Budget. Only about half of these two groups are needed to operate the present IBM equipment but the ICT group cannot transfer to the IBM operations without loss of permanent status. All are now charged to Data Processing. A similar lack of flexibility exists in shifting work from one source to the other. With this lack of integration budget increases tend to set up series of partially unrelated organizational units.

- c. Budget expenditures lack flexibility since any changes in individual line items down to small details have to be cleared through the Planning and Finance Departments.

#### 6. Shortage of Trained Personnel and Low Salaries

At the salaries offered it is difficult to find adequately trained statisticians. When posts are advertised a sufficient number apply but the great majority have no better than Class II level of academic work. They may know a few formulas by heart if they are recent graduates but they know nothing of practical applications. This is equally true for both those with Bachelor's and Master's. Little can be done about this problem until the universities give greater emphasis to practical application than to learning theory by rote.

The persons trained under the AID program, although much better qualified, rarely get any better posts because of seniority rules. Under the circumstances their enthusiasm to apply what they have learned soon diminishes.

There appears to little chance raising salary levels. The reason given for retaining the present level of salaries of statistical workers is that if they were raised all employees of equal rank would also have to be raised. The National Statistical Council proposed about five years ago that a special career service be established for economists and statisticians but this has never received Cabinet clearance.

#### V. Recommended Action by GOEP

Many of the problems in building an effective statistical system are inherent in the administrative organization, the educational system and scarce resources. Nevertheless there are some steps the Provincial Government could take that would help.

##### A. Supervision

1. Approve the appointment of two deputy directors for the Bureau of Statistics with specific functional responsibilities. These posts should be part of the permanent staff paid out of revenue budget and at a somewhat higher scale than present if possible. An alternative would be to appoint one deputy and three assistant directors, the later to be filled by promotion from within.
2. Give section heads responsibility for setting up performance standards and authority to enforce them. In turn the section heads should be responsible to their supervisors for high quality work and for meeting fixed time schedules.

B. Reorganization and Related Actions

1. The Bureau of Agricultural Statistics should be given separate status within the Agricultural Department with a Director at the head, parallel in rank to the BOS Director. It should be given funds and responsibility for collection of a broader range of agricultural production statistics.
2. A single person should be appointed as head of the Survey Wing of the BOS instead assigning responsibility for each survey on an ad hoc basis to the four Research Officers.
3. The Coordination Section should be strengthened by addition of at least two Research Officers to carry out the rapidly developing work related to the Provincial Statistical Council's efforts toward coordination of all Provincial Statistical activity.
4. The Provincial Statistical Council should expedite its plans to evaluate gaps and overlapping work in statistics, to establish programs for rectifying these, and to establish procedures for setting up statistical standards. To do this the Executive Committee should meet at least once a month and the PEC at least four times a year.
5. Procedures should be established for better integration between operations under developmental budgets and those under revenue budget so that there is more flexibility in assignment of staff.

C. Budgets

1. Increased budgets should be made available to provide for deputy and assistant directors and for about 4 more statistical or research officers in this fiscal year. Personnel budgets should be increased gradually as it is demonstrated that they can be used effectively under better supervision.
2. Funds should be made available to purchase offset press equipment. A proposal is in preparation. This will require foreign exchange.
3. At least two electric calculators and two electric adding machines are needed in the BOS. Dust free file storage space is needed in all agencies where the file folders can be systematically filed in such a way that access can be had without moving piles of them. Metal vertical files would be preferable but properly made wooden cabinets could serve.
4. An increase in amount allocated to rent of field office space from Rs.50 to Rs.100 per month. Suitable space has not been found at the present rate for 11 out of the 12 field offices not in one of the 6 regional office cities.

5. Budget expenditures should be given flexibility within major heads so that adjustments can be made without necessity of clearances for each change in individual items of expenditure such as indicated in item 4 above.

D. Other Actions

1. For the long range GOEP should give consideration to a complete reorganization of statistics. The importance of better statistics could be given recognition by creating a Department of Statistics, such as the State Institute of Statistics in Turkey. Operating under the Additional Chief Secretary for Planning, such an organization should encompass all but the very specialized statistics gathered for purely administrative purposes.
2. In the interim more time and attention should be given by top administration to improvements within the present arrangements.

E. Recommended Action by USAID

Although the Statistical Services Project is relatively small compared to some other projects, there should be more direct participation on the part of USAID administration. Since the counterparts of the Statistical Advisors are of a low level in the Government hierarchy, they would have little influence to major policy changes. Higher level contacts on the part of AID officials should be aimed toward a clearer focus for the project.

It is further recommended that in the event GCP makes no greater effort than in the past to improve its statistical organization and operations, Statistical Services should be phased out when the present members complete their current tours. The tours end as follows: October 1968 - Data Processing Advisor; January 1969 - Senior Statistical Advisor and June 1969 - Agricultural Statistics Advisor. Before phasing out the project, consideration might be given to continuing one or more advisors as part of other on-going specific projects in areas such as Family Planning or Agricultural Development.

Attachment A

GOEP Bureau of Statistics, Budget and Employment, 1960 to Date

<u>Financial Year</u>	<u>Annual Budget Revenue</u>	<u>Development</u>	<u>Number of Employees</u>		<u>Total Employees</u>
			<u>Permanent</u>	<u>Temporary</u>	
1959-60	Rs. 306,993		92	-	92
1960-61	280,557		92	-	92
1961-62	287,000		92	2	94
1962-63	304,000		92	2	94
1963-64	342,000	+95,000	89	133	222
1964-65	340,000	+443,000	89	133	222
1965-66	344,000	+593,080	89	133	222
1966-67	354,083	+473,681	89	278	367
1967-68	373,000	+1,788,000	89	278	367

Attachment B

Bureau of Agriculture Statistics  
Government of East Pakistan  
Budget and Employment, 1961 to Date

	<u>Budget (Approx)</u>	<u>H Employees</u>		<u>Calculating Machines</u>	
		<u>H.O.</u>	<u>Field</u>	<u>Electric</u>	<u>Manual</u>
1961-62	Rs. 300,000	50	66	-	10
1962-63	300,000	50	66	1	10
1963-64	300,000	50	66	1	10
1964-65	300,000	50	66	1	10
1965-66	400,000	50	67	1	10
1966-67	470,000	56	95	3	15
1967-Present	750,000	72	130	3	15
1968 By end of fiscal year		72	393	3	15

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Attachment C

Institute of Statistical Research and Training  
Budget and Personnel, 1962 and 1967

<u>Financial Year</u>	<u>Annual Budget</u> <u>(Approximate)</u>	<u>Staff</u> <u>Professional</u>	<u>Clerical</u>
1961-62	Rs. 75,000	3	12
1967-68	125,000	8	25

Note: Specific annual data are not available. The expansion occurred gradually over the six years.

Attachment D  
Summary of Accomplishments in Key Agencies

<u>Activity</u>	<u>Date</u>
<u>I. Strengthening Key Agencies</u>	
<u>A. Bureau of Statistics</u>	
1. Approval of development scheme for an ad hoc Sample Survey Organization	1963-64
2. Increase in staff by 133 temporary employees	1963-64
3. Set up six temporary field survey offices	1963-64
4. Approval of development scheme for permanent Sample Survey Organization and 18 field offices	1964-65
5. Approval of Developmental scheme for data processing	1965-66
6. Organization of an ad hoc Provincial Statistical Committee	1965-66
7. Implementation of development scheme for Sample Survey Organization	1966-67
8. Implementation of developmental scheme for data processing	1966-67
9. Increase in staff by 145 workers (developmental budget)	1966-67
10. Permanent establishment of Provincial Statistical Council	1967-68
11. Improvement in space and working conditions including air-condition for data processing equipment	1967-68
12. Eight returned participants now contributing to strength of staff and two are in other statistical agencies, together representing 100% of those trained during	1960-67
(NOTE: Of participants sent prior to 1960, three are still with the Bureau and three have moved to more responsible positions in the GOEP)	
13. Two participants are now in training and 2 are to be sent this year.	

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B. Bureau of Agricultural Statistics

1. Approval of developmental scheme and establishment of the Bureau 1961-62
2. Pilot study for setting up sample objective survey of crop acreages and yields for major crops 1961-62
3. Sample survey established with 600 clusters 1962-63
4. Sample survey enlarged to 2,000 clusters 1963-64
5. Sample survey enlarged to 6,200 clusters for estimating acreage and 2,500 crop-cutting plots 1964-65
6. Approval of development scheme for expansion of field inspection staff 1965-66
7. Extension of field inspection staff by 150 or 75 percent of planned staff size 1967-68
8. Technical Committee established to recommend means of strengthening and expanding objective measures to other crops 1967-68
9. Of two returned participants one is with the Bureau and one is with another agency. One more is now being trained.

C. Institute of Statistical Research and Training

1. Established as separate institution 1962-63
2. Staff expanded from three professionals and 12 clerical workers to 8 and 25 respectively in the period 1963-67
3. Two staff members sent to States for graduate training and one more will be sent this year 1965 and 1968

II. Developing Capabilities in Data Processing

A. Bureau of Statistics

1. Acquisition of initial IBM equipment (used) 1964-65  
(NOTE: BOS already had some antiquated ICT equipment with very limited capacity)
2. Acquisition of modern IBM equipment to replace all old equipment 1966-67

3. Initiated use of simple work measurements 1965-66
4. Improved work measurement techniques and established standards of performance 1966-67
5. Scheduling of work and training to obtain approximately 100 percent utilization of equipment (1 shift) 1966-67

B. Institute of Statistical Research and Training

1. Acquisition of data processing equipment 1964-65
2. Provision of air-conditioned space 1967-68

III. Expansion of Training Facilities

A. Bureau of Statistics

1. One participant trained to head Training Section 1965-66
2. Two participants trained to conduct Household Survey Workshop 1967-68
3. Series of training classes for BOS and ISRT combined established for training in data processing (56 persons took the first course) 1966-67

B. Bureau of Agricultural Statistics

1. Annual training of agricultural extension workers in crop-cutting and area measurement 1963-67
2. Workshop training programs established for training new staff of field inspectors 1968

C. Institute of Statistical Research and Training

1. Through expansion in staff registration for regular training (4 certificate courses) from about 30 students to over 80. 1963-67
2. Data Processing Advisor set-up DP courses 1967-68

IV. Introduction of New Statistical Series, Techniques & Research

A. Bureau of Statistics

1. Establishment of preliminary rural household sample 1964-65
2. Revision and expansion of rural household sample 1967-68

3. Six rounds of the rural household survey conducted covering household characteristics, land holding and utilization, production, income and expenditures, livestock inventory, marketing practices and surplus labor in peddy cultivation 1964-67
4. 7th round of the rural household survey ready for enumeration covering use of improved agricultural practices and food consumption 1968
5. Quarterly series of construction material prices, and wages of construction workers 1962
6. Improvements in sampling, enumeration techniques and frequency introduced for above series 1967-68
7. Listing of all establishments by type of activity and employment size for 6 urban centers 1966-67
8. Annual Census of Manufacturing Industries started 1962-63
9. Improvement in schedule design of CMI and new program for bringing census up to date 1967-68
10. Introduction of use of survey pre-tests 1965-66
11. Survey of Salt Production 1966-67
12. 1964 Census of Civil Servants (collected over a two year period by O&M and tabulated by BCS) 1964-67
13. Formation of working groups or committees under the Provincial Statistical Council to identify statistical gaps 1967-68
14. Participated in National Statistical Council panels and working groups to develop interwing coordination 1960-67
15. Introduction of annual "Statistical Digest" to replace outdated "Statistical Abstract" 1964-66
16. Publication of quarterly mimeographed "Economic Indicators" 1967-68
17. Developed project (402 financing) for Skilled Manpower Research 1966-67
18. Developed project (402 financing) for expanding and improving "Economic Indicators" 1967-68

19. Project for research in ways to improve the vital statistics registration systems being developed 1967-68

(NOTE: None of the above are fully approved)

20. Developed basic data from CMI for industrial input-output tables 1966-67
21. Gradual introduction of more formalized training for specific surveys in the forms of simple written instructions and schedule directions. 1966-68

B. Bureau of Agricultural Statistics

1. Phased development of objective measures of crop acreages and yields from a small pilot study to a scientifically selected group of 5 more sample clusters now totalling 5,200 for acreage measurements and a subsample of 2,500 plots for crop-cutting (yield estimate) 1961-67
2. Aus and jute objective estimates accepted as official by GOEP in place "eye" estimates; also aman with slight administrative modifications. 1966-67
3. Improvements in method of ratio estimating acreages and yields 1966-67
4. Introduction of small scale pilot studies on quality control and quality evaluation procedures 1966-68
5. Expansion of field inspection staff which will permit introduction of regular quality controls and follow-up quality evaluation of estimating procedures. 1967-68
6. Technical Committee established to expand coverage of objective surveys to addition 1967-68

C. Institute of Statistical Research and Training

Contract research projects and staff studies undertaken by ISRT include:

1. Analysis of Population Growth Estimates for World Population Council 1962-63
2. Urban Growth Study of Dacca 1963-64
3. Housing Survey of Dacca 1964-65
4. Industrial Health Survey 1965-66

5. Urban Growth and Industry Location 1965-66
6. Population Projection Models for Family Planning 1966-67
7. Issued semi-annual "Bulletins" 1966 and 1967

V. Miscellaneous Activities

- A. Agricultural Statistics Advisor as a trained mathematical statistics has provided sampling advisory services to the Central and West Pakistan Governments. 1965-68
- B. Data Processing Advisor assisted in the installation of a payroll accounting system at Adamjee Jute Mills 1966
- C. The Senior Statistics Advisor and the Agriculture Statistics Advisor advised on preliminary planning for the Decennial Censuses of Population, Housing and Agriculture 1967-68
- D. A geographer from the Department of Geography, University of Dacca was sent to U.S. for training in census mapping 1967-68
- E. All Advisors actively participated in mounting a CENTO Statistical Conference in Dacca in 1966 and an All-Pakistan Statistical Conference in 1967.

# CURRENT STATUS OF EAST PAKISTAN STATISTICS

By  
Joseph M. Liberson

## I. Introduction

There is no shortage of statistical data and indexes available in East Pakistan. Almost every government department and semi-autonomous Agency collects its own statistics. The problems are: (1) the lack of comparability in the indexes of different agencies, (2) long delays in publishing data, and (3) the inadequate collection techniques.

1. Only within the last few years have the statistical enumerators been given commodity specification to use when they collect prices. Each agency now has its own classification but each agency uses different classifications and different sampling techniques. There are more than a half dozen rice price indexes (collected by four agencies) which are not comparable, overlap and duplicate each other. Even with all of the rice price information, collected at many markets by the various agencies, there still is no weighted Provincial rice price for any grade of rice.

Cost of living indexes and consumers price indexes are collected by the East Pakistan Bureau of Statistics (EPBOS) the Central Statistics Office (CSO) and the GOEP Labor Directorate for Dacca, Chittagong and Narayanganj. Each is constructed in a different manner for different consumer groups.

2. Most of the statistical collection agencies suffer from chronic delays in the release of the data they collect. C.S.O. is one of the more current sources with data only three months old. Most are like the EPBOS where the "Monthly Statistical Bulletin" is two years behind at the press and compilation is about a year behind. The EPBOS attempted to update its publication with "the Quarterly Economic Indicators", but after the first two issues it also is falling behind. The Bureau of Agricultural Statistics publishes its compilation of agricultural acreage and production every three or four years, with mimeographed releases in-between. Statistical data which is left unpublished or published long after the date to which it applies has little or no value in economic planning.

3. A basic problem, which is being improved, is the techniques of data collection. Subjective "eye estimates", poorly chosen samples, inadequately defined commodity specification, and the failure to accurately collect data plagues all of the statistical series.

## II. Organization of the East Pakistan Bureau of Statistics

The Bureau is headed by a director and deputy director. The operations are broken down into two branches according to their funding classification. The Development Program (funded by the ADP) and the Revenue Program (funded from the Revenue Budget). Under Revenue Budget Funding are 92 employees, with 20 of these employees in the Establishment Section doing administrative tasks. The remaining divisions compile data usually obtained from other sources. These divisions are: price statistics, vital statistics, industrial statistics, food and agriculture statistics, ICT data processing, printing and publication and the library.

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The Development staff consists of approximately 50 employees in the Data Processing Division and approximately 130 employees in the Sample Survey Division. Over one hundred enumerators of the Sample Survey Division are out collecting data in the 6 regional and 13 field offices.

The Organization of the EPBOS is fairly rigid with the traditional compilation from secondary sources by the Revenue Section and the collection and processing of primary data in the Development Section. Employees under the Revenue Budget have permanent tenure while Development employees do not have such permanent status. This creates a lack of flexibility since employees cannot be readily shifted to work on tasks outside of their funding category. For example, data processing is divided into two groups (1) former operators of the discarded ICT equipment who work under the Revenue Budget and (2) operators of IBM equipment under the Development Budget. Only about half of these two groups are needed to operate the present IBM equipment but the ICT group cannot transfer to the IBM operations without a loss of permanent status. This lack of an integrated budget tends to set up a series of partially unrelated organizational units with strong rigidities. It is thus hard to even-out the work load to meet cyclical and long run changes in statistical work requirements. This lack of flexibility is probably one of the greatest hinderences to getting new data out quickly and periodic collections published promptly. Some sections are slowly and laboriously compiling detailed statistics which will not be published for a year or more while other sections are desperately trying to meet overdue publication deadlines.

### III. A Look at the Data Collected

See Appendix I for a detailed review of EPBOS Statistical Data, as presented in the "E.P. Quarterly Economic Indicators". This publication is a good collection of the more useful statistical series prepared by EPBOS.

The East Pakistan Bureau of Statistics collects data mainly on prices but also some limited wage data. All of the other data is borrowed from other agencies. The Bureau collects price information on approximately 200 items. Of the 26 statistical series (see Appendix I) only 3 represent original data collected and compiled by EPBOS. Nine series are obtained directly from CSO, three directly from other GOEP agencies, and eight from other agencies but recomputed or modified by EPBOS. Almost half of the series are "borrowed" exactly as they were originally published by the other sources. One third were recomputed by EPBOS and only one fourth represent original statistical work collected and compiled by the Bureau.

One of the problems for users of EPBOS statistics is that we know the weaknesses of the Bureau's own data but we have no way of knowing how good the data is which the Bureau has borrowed from other sources.

The information presented in Quarterly Indicators is better than most other EPBOS publications but still reflects the fact that data is presented which is easily obtainable, even if it is not of any particular value. Men sit at the Bureau filling up ledgers with figures which are of very marginal value. To give two examples:

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a) The Vital Statistics Section compiles detailed tables on births, deaths and causes of deaths by District. These statistics are based on very incomplete and old reports submitted by Thana Health Officers. According to these records, birth rates for the Provincial average 18 per thousand instead of the 48 to 50 now estimated to be the actual rate. Why compile out of data, incomplete data which will be of no use to policy makers?

b) The EPBOS Food and Agriculture Section compiles even more detailed data on agriculture production statistics, which are also out of date. Similar, more comprehensive and more timely information is published by the Bureau of Agricultural Statistics.

As an official of the GOEP Planning Department said "why can't the Bureau of Statistics prepare more timely information on important economic areas so that we can have something solid to base our Economic decisions on"?

#### IV. Primary Data Collection by the East Pakistan Bureau of Statistics

The Sample Survey Division is funded under the East Pakistan Annual Development Program. There are approximately 130 employees with over 100 enumerators in the six regional offices. The Sample Survey Division performs the following surveys:

- Rural Household Survey
- Salt Production Survey
- Establishment Survey, with numbers of employees in 6 urban centers.
- Wages rates by industry

There are many problems for the Sample Survey Division in effectively collecting primary data from the field. Of the eighteen field offices only one has been set up. No quarters have been found for the other field offices since the rents authorized by the Bureau are way below the market rates. Travel to work assignments is difficult and time consuming. In addition travel allowances are small and not paid promptly, thus causing reluctance on the part of the enumerators to go out and do their work. The flow of assignments to regional and field offices is spotty resulting in periods when no survey work is being done.

Primary data, mainly on prices are collected by enumerators of the EPBOS Revenue Section. As pointed out previously much of the data collection is duplicated by other agencies. The Food Directorate and the Agricultural Marketing Directorate collect various rice prices in 58 centers versus the seven centers surveyed by EPBOS. The Central Statistics Office collects weekly price data on about 100 retail items (about the same number as EPBOS) from two urban centers (versus 7 EPBOS centers). CSO also collects trade, production, public finance and provincial income estimates.

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Many of the cost of living indexes used by the Bureau are based on expenditure patterns ten or more years old. These expenditure patterns were made on small samples and resulted in a "family market basket" which bears little relation to current expenditure patterns. No one in the Bureau is really sure how these old surveys were constructed but the general feeling is that they are of little value.

The commodity specification and sampling techniques are slowly being improved but there still is no effective quality check on the work done by the enumerators. An enumerator can talk to a few shopkeepers fill in prices in his questionnaire sheet and then spend the rest of his time in a teal stall. Many prices are reported at the same level for months and then the price jumps to a different level, giving one the impression that price data was not collected regularly.

Primary data collection is the basis of all statistical series, but it is still one of the major weaknesses in East Pakistan Statistics. Statistical data collection is improving slowly and will hopefully be getting better in future years.

#### V. EPBOS Relationship with the Planning Department and Other Agencies

Administratively the Bureau of Statistics is under the Planning Department. The Planning Department formulates and reviews East Pakistan's Economic Planning within the context of the GOP's Five Year Plans and the Provincial Annual Plan. The EPBOS collects data from other agencies and does its own surveys to provide information for the Planning Department to use in its economic policy considerations.

The Director of the Bureau reports to the Planning Department's Deputy Secretary for Administration. The Deputy Secretary for Administration, as his title implies, is primarily concerned with bureaucratic and organizational matter not with statistics and economic policy. Thus the EPBOS relationship with planning is a loose administrative relationship, not a direct operational or line relationship. The Additional Chief Secretary (ACS) is responsible for the direction of the Planning Department and takes an interest in the supervision of the Bureau of Statistics. From time to time the ACS gives directives to the Bureau but not continuous supervision and guidance.

A basic problem is that there is no direct line of operational authority from the Planning Department to the Bureau and no continuous assignments or orders given by the Planning Department. One of the biggest mistakes is to leave statistics in the hands of statisticians. This has resulted in the compilation of old data which is of marginal value to consumers of statistical data. What has been lacking is someone to direct EPBOS to collect useful statistics for policy planning. Presently Deputy Secretaries in the Planning Department make informal requests to the Bureau for various statistical information and data which they need. This loose relationship means that quite often the Planning Department does not have the data it needs, prepares its own statistical information, or at times prepares statistical series which duplicate the work of EPBOS.

The working relationship between the Planning Department and the Bureau of Statistics has become closer through two US AID sponsored projects - "Quarterly Economic Indicators" and "Skilled Manpower Research". The Planning Department has determined the areas in which it needs more statistical information and is working in joint cooperation with EPBOS on these two projects. This is an adhoc working relationship and represents steps to improve the basic weak operational link between the two departments. This type of arrangement would be encouraged by the Pakistan Statistics Council.

One of the functions of the E.P. Bureau of Statistics should be to coordinate statistical data collection in the Province. Any GOEP agency which plans to collect data or prepare statistical studies under ADP funding must submit its proposal to the Planning Department which in turn may have the EPBOS review the proposal. In practice EPBOS does not have the role or resources to effectively fulfill this coordination role.

One of the more important development towards better statistical coordination is the Provincial Statistical Council (PSC), which has been in actual operation only since November 1967. The Council is patterned after the National Statistical Council and consists of twenty-three Provincial Secretaries and Directors of agencies concerned with statistics. The EPBOS serves as the secretariat for the Council and it is planned to have it increasingly act as a coordinator or service bureau in field data collection and data processing for other agencies.

The two main functions of the Provincial Statistical Council are:

Coordination: to reduce duplication and overlapping of effort.  
Statistical Standards - to develop uniform: classification, sample survey methods and compilation techniques.

It is too soon to pass judgement on PSC but if a start can be made on these basic problems then real progress will be made in improving East Pakistan's statistical data.

## VI. US AID Assistance

The scope and results of US AID technical assistance have been summarized in numerous other papers and thus will only be briefly reviewed. Approximately seven man-years of technical assistance have been provided to EPBOS out of the total of fifteen man-years of Statistical assistance provided to the Province. Statistical Advisors have worked with the Bureau to provide both on the job training and advice on management and organization. The advisors have had a split function: (1) operational work to improve, statistics methods, collection techniques and compilations of indexes, (2) while also working to improve management planning and direction. Listed below are some of the advisor's major achievements:

- The data processing section was built up from scratch.
- A master sample survey of rural households has been initiated.

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- The Provincial Statistical Council was started.
- Joint statistical projects with the Planning Department were developed to improve the working relationship of the Bureau within the Planning Department.
- By discontinuing marginal series and publications an attempt has been made (not too successful yet) to bring the Bureau's publications up to date.

Work is also moving ahead in the following new areas:

- Improvement of the field survey organization.
- Improvement of data processing capabilities.
- In-service training of the statistical staff.
- Printing facilities for the Bureau.
- More formalized training instruction for the enumerators.
- The use of pre-tests for sample survey.
- Post-enumeration checks on the quality of data collection.
- Better statistical index construction and better statistical presentation for publications.

Since 1960 eighteen participants have been sent to the U.S. for statistical training. Sixteen of these participants were from the Bureau and eleven of these men are now back working at the Bureau. Of the five participants who did not return to the Bureau; three are working in higher statistical positions with other agencies; one has retired and one is working for a non-statistical agency.

## VII. Conclusions

The East Pakistan Bureau of Statistics is similar to most other East Pakistan Government and semi-government institutions. It has all of the appearance of an old line agency with few new ideas or approaches; merely doing its day-to-day work with little thought of the relationship and usefulness of its work to other agencies. The EPBOS sees itself as a collector of data, to be stored away and only infrequently published for statistical users. This custodial function has slowly been modified by US AID inputs of advisors and participant training along with support by the Harvard Advisory Group.

### A. The Weakness

It is not only the gaps in current statistics but the poor quality that presents major problems for users of statistical data. Figures are generated by the EPBOS and numerous GOEP statistical agencies with little

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concern about the accuracy or usefulness of the data. The casual collection technique of enumerators and the lack of follow-up and control on the enumerators hampers any policy which is heavily dependent on East Pakistan statistical data. In addition to the weaknesses of the data collected there are major areas where no data is collected. Data which is readily available is collected in voluminous quantities even if it is of little value or omits important sources. There is a general lack of resources, men and equipment, devoted to statistics which is further compounded by excessive duplication of effort by competing GOEP collection departments.

#### B. The Reasons

The basic reason is that the GOEP has placed a very low priority on statistics. This is evident in the small annual increases in the budget allocations. GOEP planners have operated without good statistical data. They do not appreciate its vital importance as a basis for their planning decisions. This attitude may be changing with the recent acquisition of national accounts data from CSO.

The Director of the Bureau of Statistics is changed every few years. No attempt has been made to place a Statistician or Economist in charge with the idea of letting him really work on improving the Bureau over a three to five year period.

To compound the lack of continuous administrative direction and the meager resources are the frequent crash statistical programs and raids on the best EPBOS managerial talent. Currently three of the Key Section heads are on loan to the Governor's office and the Dacca Municipality. The GOEP places such a low priority on the output of the Bureau that it makes available meager resources and then borrows the best manpower for other projects.

The final reason for these statistical problems is the lack of communication and coordination between the statisticians and the users of the statistics. As stated previous, letting low level statisticians run the statistical program without adequate leadership or direction is like letting the bookkeepers or accountants run a business. The information collection branch must be closely integrated into the decisionmaking branch, if there is to be any effective use and feedback in statistics collection. The Provincial Statistical Council is making a start on this basic coordination problem.

#### C. What to do.

To improve East Pakistan Statistics new coordination and organizational reforms will have to be encouraged by high Pakistani officials. Advisors such as US AID and HAG can also play a part in suggesting the type of improvements which should be considered by the Pakistan Government.

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\*Most of the EPBOS Dacca Headquarters offices are housed in sheds, which are bamboo structures with iron roofs and concrete walls.

One alternative which could be considered would be to turn over the major role of East Pakistan statistical collection to C.S.O. C.S.O. presently produces the most up-to-date East Pakistan statistics on a broad series of economic data. C.S.O. also has more experience, skilled manpower and equipment than any of the East Pakistan statistical collection agencies. There are two limitations to this alternative: (1) CSO has only one office in Dacca and two small field offices with a limited number of enumerators. (2) The GOP policy of encouraging and strengthening Provincial Governmental planning capabilities and initiative would be severely undermined by such a move towards centralization, and is thus not politically feasible.

A more promising alternative would be to bring the major users of data into a direct working relationship with the statistical collection department. The key organizations in such an arrangement would be the Provincial Statistical Council, the GOEP Planning Department and the East Pakistan Bureau of Statistics.

A first step would be to collect from the various statistical users a list of the information they need. In brief talks with the Planning Department a number of areas were mentioned to me. Most of the data for these areas are presently estimated by the Planning Department or based on partial information and could be defined more precisely:

Housing investment.

Per capita rice requirements and actual intakes.

What is the agricultural marketable surplus?

What is the elasticity of demand for various items?

Is 10% seed, feed and wastage the proper amount to subtract from gross rice production?

What depreciation factor to use in determining Net National Product?

What is the urban and rural marginal propensity to save, what is the income distribution?

What is the up-to-date Provincial livestock population?

A continuing Small Industry Survey is needed.

An index of East Pakistan Industrial Production is needed.

After a provincial catalog of data needs is compiled the data could be ranked according to priority based on planning needs and partly on the availability of information.

The Provincial Statistical Council is composed of the top men from all of the Provincial departments concerned with statistics and presents an excellent base for coordination. It could serve much like a Corporation's Board of Directors: setting policy, compromising differences, and following up on the results of its policy directives. Presently PSC is an informal coordination body: it needs to be given authority to set and enforce policies for better coordination and improved statistical standards. PSC could eventually determine the series needed, cutout duplication and assign specific functional areas to the various statistical collection departments.

The GOEP Planning Department, through its economic planning role, is one of the major users of statistics. More formal working arrangements at staff levels need to be developed with the EPBOS. The Planning Department's Research Section should be expanded and work as the liaison office with EPBOS. A new relationship will have to be developed so that the EPBOS can provide a true statistical service function to the Planning Department and other departments. Consideration should be given to placing EPBOS work programs under more formal control and authority of the Planning Department. US AID Statistical Advisors have the experience and the technical knowledge to advise the GOEP in such a development.

US AID assistance, it has been said, is too diverse and spread too thin over the total East Pakistan statistical program. An evaluation is currently being made by US AID/Lahore to determine where to focus the US AID effort. The major agency to focus attention on should be EPBOS. It is the primary East Pakistan Statistical Agency collecting data on all areas of the economy and will be a major part of any statistical coordination program.

US AID should evaluate the available statistical data and the gaps in the data to set up a list of data needs in the Province. This has been partially done in the formation with the Planning Department of three statistical projects - "Current Economic Indicators", "Cost Benefit and Commodity Balances" and "Skilled Manpower Research with National Income Supplement". The various US AID Divisions concerned with statistics (PAD, ECON, PH, AGR, ENO, CDO) should determine the type of data needed, and rank it according to its importance, for planning in East Pakistan. If three to five priority areas could be determined then US AID efforts could be concentrated to achieve the maximum effect.

As a suggestion here are some areas that are being worked on and should receive continued emphasis:

1) Sample Survey Techniques

Primary data collection is the greatest weakness of all statistics. Advisors and participant training could be directed at improving: sample selection, enumerator training, questionnaire preparation, pre-testing, and evaluations and checks on enumerators.

2) Industrial Statistics

The annual census of manufacturing industries need to be updated and improved. One method of doing this would be to take it every two or five years instead of every year and to do monthly or quarterly surveys to provide current data. A Small Industry Survey is needed and an Industrial Production Index needs to be constructed.

3) Agriculture

Continued work on crop cutting surveys and production estimates.

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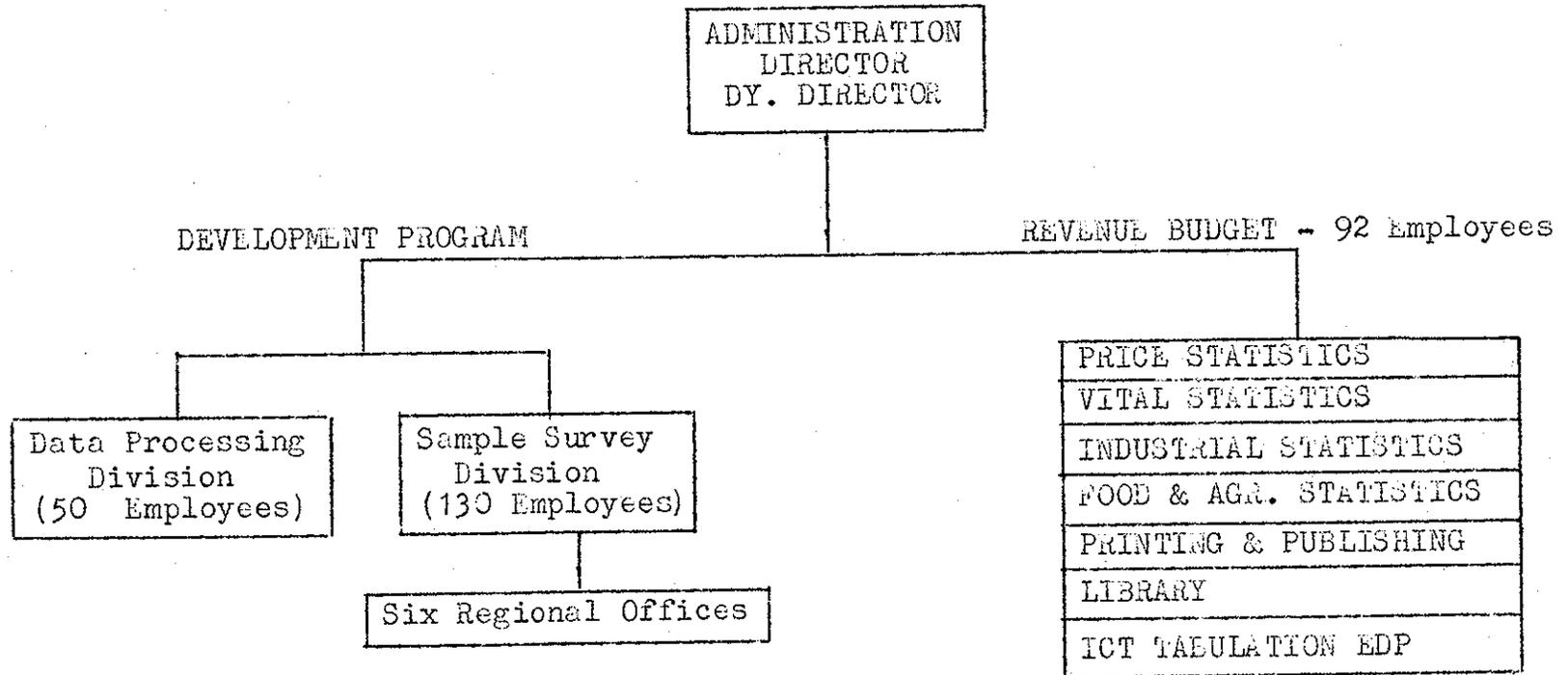
4) Population

Support the C.S.O's Population Growth Survey to find out what is the actual East Pakistan population, growth rate, mortality rate, etc?

US AID's limited technical assistance cannot cover all of East Pakistan's vast statistical needs, it must be concentrated in a few high priority areas. US AID should encourage the GOEP to also concentrate its efforts by eliminating statistical series which have little value, reducing duplication and coordinating the efforts of all data collectors and data users. US AID should concentrate on improving key statistical fields i.e. data collection, timely publication and certain key statistical series.

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East Pakistan Bureau of Statistics



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Statistical Series, East Pakistan

The "Quarterly Economic Indication for East Pakistan" is one of the most useful and upto date publications of EPBOS. A look at the twenty six indexes in the publication, and how they are compiled gives a good picture of the work of the Bureau. Of the twenty-six series, nine are taken directly from Central Statistics Office publications; four from other GOEP sources; seven from other agencies but recomputed or modified; and six are collected and compiled by EPBOS.

A. Series obtained from CSO and merely published by EPBOS

1. Post Office Savings -

The monthly deposits and withdrawals in East Pakistan Post Office Savings Bank are compiled by CSO from Post Office Department records.

2. Production of Selected Industrial Commodities -

This series has production quantities (not rupee value) for ten major East Pakistan Commodities which probably account for 70-80% of East Pakistan industrial output. The data is compiled by CSO from the GOP Board of Revenue. Since the Board of Revenue is taxing body, the figures which businessmen give them should be viewed with a bit of skepticism.

3. Supply of Sugar in East Pakistan

Monthly and yearly production and import figures give the total sugar availability in East Pakistan. CSO compiles the data from records of the Directorate of Movement and Storage of the Food Department.

4. Trade Statistics of East Pakistan

This series presents monthly and yearly data on E.P. Import and Export Trade with West Pakistan and the rest of the world. CSO compiles this data from shipping documents of the Controller of Imports and Exports. There is a time lag on reporting so that exports are usually understated by Rs. 8 to 10 crore per month.

5. Index Numbers of Wholesale prices by Major Groups

This CSO index is computed on weights derived from the total value of production and value of foreign and interwing imports during 1960-61 (but using 1959-60 as the base year). The weights have not been recomputed for changes in relative values over time. Price data are collected for the five categories in part by CSO price collectors, but more generally from various Government Agencies. The accuracy of prices supplied are not verified.

6. Index of Wholesale Prices by Commodities

This index is computed by CSO for 18 commodities in the same manner as the above Index in number 5.

7. General Cost of Living Index of Narayanganj Industrial Workers
8. Consumer price Index of Narayanganj Industrial Workers (by expenditure categories).

These two indexes are computed by CSO based on weekly prices collected by CSO enumerators. The Narayanganj Cost of Living Index has weights by commodity groups representing the relative parts of the family budget spent on each group of commodities. This budget is based on a very limited survey made in 1955-56 and after 12 years is quite out of date. The consumer price index, is probably a more accurate indicator of consumer expenditures.

9. Consumer Price Index for Clerical Workers in Chittagong

The index is computed by CSO using methods similar to those mentioned above. This index relates to the budgets of clerical workers who have a spending pattern which differs from industrial workers, e.g. the food expenditures of clerical families are reported as 54% of their budget as contrasted with 70% for Narayanganj industrial workers.

B. Series borrowed from other GOEP Agencies

1. Value of tonnage lifted by the Pakistan Eastern Railway

Freight tonnage and earnings are copied by EPBOE from the PER Monthly Statistics Publication.

2. Registered Motor Vehicles

This data is compiled from the records of the E.P. Transport and Communications Department based on District Office reports on registration. These figures are maintained on a quarterly basis. The accuracy of the primary data collection is not known.

3. Chittagong Working Class Cost of Living Index

This index is computed by the GOEP Directorate of Labor and is based on an estimated family budget survey of 1946 (which consisted of approximately 20 families). The family "market basket" is based on an out-dated and very limited survey with prices up-dated only to 1959-60. The basic inadequacies of this index make it of little use.

4. Prices of Raw Jute

The grower prices and export prices are obtained from the Jute Board. Since the GOEP has set a minimum growers price for jute, and the actual price is reported below this minimum, one wonders how truthful the jute buyers are when they report the price they are paying. The Agriculture Marketing Directorate also collects growers jute prices from a much wider sample, 58 centers.

C. Series collected by other agencies but recompiled or modified by EPBOS.

1. Index of Wholesale Prices of Agriculture Products by District

EPBOS computes the index using prices reported by the Directorate of Agricultural Marketing. Weights are based on an average of three years production (FY 1958-FY 1960) reported by the Bureau of Agricultural Statistics.

2. Index of Wholesale Agriculture Prices by Commodity Groups

This index is computed in the same manner as the previous index (# 1) using the same average of three years as the base.

3. Index of Industrial Production

Production levels for fifteen industrial items, accounting for approximately 80% of East Pakistan Industrial output, are compiled by C.S.O. The base year of 1959-60 is up-dated to 1962-63 by EPBOS. The weights for each of the indexes is the monthly value added as shown in the 1962-63 EPBOS census of manufacturing industries.

4. Index of Gross Production of selected Agricultural crops.

The weight are the value of the production for the base period FY 1956-64. EPBOS computes the index using Bureau of Agricultural Statistics production estimates converted to a simple index.

5. Index of Agricultural Production, Acreage, and Yield Rates

EPBOS computes the indexes using BOAS production, acreage and yield estimates. Weights used for combining production and yield rates are the average annual gross value of production during the First Five Year Plan. The value of production is determined by applying average wholesale prices.

6. Comparison of Crop Production with Population Growth

The Agriculture production indexes from the above (#5) chart were computed to a new base, and the official Planning Commission population estimates are used. The official population growth rate, of about 2.7% is much lower than the estimated actual rate of 3.3%. The undercounts of the 1951 and 1961 population census and the low population growth rate used result in an index of little practical value.

7. Index of Share Prices

EPBOS uses information from the Dacca Stock Exchange to prepare this series. The average share prices are weighted by the paid up Capital of each corporation to determine the weights in each industrial group.

D. Data collected by the East Pakistan Bureau of Statistics

1. Retail price of rice - medium quality

The rice price, "medium" is determined by rather general specification and probably differs from market to market. EPBOS collects the data weekly in seven urban centers by enumerators who contact three outlets in Dacca and one in each of the other centers. These outlets were selected in 1951 and are the same each week. Weekly prices are averaged for the month and a simple average is taken for the year. Theoretically a field inspection staff member checks to see that the enumerator is following the commodity specifications and is doing his job. It is doubtful if this type of quality control is being done. An additional problem is that the enumerator may not get the actual "bargaining" selling price. The shopkeeper quotes him a price, but if he was actually going to buy the rice he probably could bargain the price down.

2. Whole sale Price of Rice

EPBOS collects this series in the same manner as in above (# 1) and the same comments would hold. The only difference is that only one outlet is contacted in each center and it may vary from week to week.

3. Retail prices of Selected Items

EPBOS enumerators collect weekly retail prices on over one hundred items, ten are included in this series. These prices are collected in the same manner as the rice prices but variable outlets are used for perishable goods.

4. Price Quotations of Gold and Bonus Vouchers

EPBOS obtains a gold price from the same Dacca dealer each week. The Bureau says that all dealers have the same price but this has never been systematically checked out. Bonus Vouchers quotations are obtained from the Dacca Stock Exchange each week.

5. Wage rates by Industry in Four towns

EPBOS enumerators weekly collects wage rates for skilled and unskilled workers in four towns in eight industrial and agricultural fields. A single employee is chosen to represent the industry and the same one is interviewed each week. There is no exact definitions of "skilled and unskilled" workers and this must vary from factory to factory. Fringe benefits are not included in the wage. EPBOS says that the books of the firms are actually examined by the enumerator but probably the manager, gives a verbal estimate of his average wage rate. All of the industries are combined in a simple unweighted series to yield an industrial average wage for each town and category. There is no provincial average rate. The fact that the wages are reported in such detail out to the last paisa makes them very suspicious.

6. Cost of Living Index for Government Employees in Dacca

This index is based on an outdated 1950 family budget survey of 200 families earning Rs. 100-400 per month. The budget has never been revised for new weights and it can be assured that it is not a very representative index today. The Bureau is planning a new Household Sample Survey which should replace this index.

BS

UNITED STATES GOVERNMENT  
Memorandum

TO: Mr. C. William Kontos, Director                      DATE: April 1, 1968  
USAID Mission to Pakistan, Lahore

FROM: Bruno A. Schiro, Principal Statistical Advisor  
Public Admin. Division, USAID/Karachi

SUBJECT: Considerations for Supporting Pakistan's  
1971 Census of Population

In accordance with your request I have prepared the attached statement on Consideration for Supporting Pakistan's 1971 Census of Population.

CONSIDERATIONS FOR SUPPORTING PAKISTAN'S  
1971 CENSUS OF POPULATION

The Need:

The need for a decennial benchmark Population Census is accepted in Pakistan. The Government of Pakistan conducted Censuses in 1951 and 1961, and will conduct its Third Census in 1971. However, there is little recognition that in order to have a good census, there must be substantial advance planning by skilled technicians, and adequate provision of resources. If Pakistan is to have a good Census in 1971 it will need external technical assistance almost immediately.

The AID Mission should consider carefully its interest in having a good 1971 Census and whether its needs require a full coverage census or a sample census that would provide data only for groupings of geographical areas and not for villages, small cities, or parts of large cities (other than Karachi and Lahore). USAID economists are the best persons to consult. If the main thrust of the Mission program is development planning, and in particular family planning and agriculture development, it should not be difficult to conclude that the need for a good Population Census in 1971 is of critical importance. In that event, your statistical advisory team recommends that the Mission assist the Government of Pakistan in getting the best Population Census in 1971 possible under the given conditions. The cost would be relatively cheap; a case can be made that this cost would be far less than the costly errors that may result in Mission programs, which are based on inaccurate Census data.

If, however, the main interest of the Mission in supporting the Population Census is the furtherance of statistical development through institution building which will provide long lasting benefits, then your statistical team must call attention to the relatively high risk that this objective might not be achieved, under the prevailing organizational and institutional conditions in which the Population Census is lodged. The statistical development project's primary interest is in institution building and we are having reasonable success in this respect with the general purpose statistical agencies. We think it would be a mistake to curtail our present efforts with these agencies, in order to support to a project which has considerably less chance of achieving long lasting benefits. If the Mission decides to support the Census Project, in addition to our present project, with due recognition

of the risks involved, we would concur in this decision. But in our thinking, the Census Project has a lower priority than our present project, because of the institutional and organizational problems outlined in the next Section.

## II. The Institutional & Organizational Problem:

The responsibility for the Population Census is lodged in the Ministry of Home and Kashmir Affairs. The primary interests of this Ministry are with regard to internal security, essentially policing functions. There is no permanent and basic interest in research, statistics, or population studies, except once every 10 years, when the Population Census Organization is resurrected temporarily to conduct the decennial census on a crash basis. Once the census has been executed and the results published, all staff (with one or two exceptions) are dismissed and disbursed. There is no intercensal program which will preserve the staff skills and experience acquired in the preceding Census, and improve these skills to perform the planning and execution of the next census. In short there has not been a permanent institutional framework for gradually improving the Ministry's capacity to conduct better Censuses.

The absence of a permanent professional staff has made it difficult to overcome prevailing non-professional attitudes such as very little advance planning is required (and therefore all that needs to be done is to replicate procedures used in the preceding Census); resources are limited and therefore the policy should be to make-do with what is available, rather than to develop advanced budgets through detailed plans of what is required; conscript labor and supervision with no pay, no travel allowances, no honoraria; dispense with adequate map controls, pretesting, training, supervision and quality control; tabulate the results by hand!

## III. Attempted Solution in the Past:

This situation has been deplored by most professional statisticians and advisors in the past. The solution attempted was to transfer the responsibility for the Population Census to the Central Statistical Office. The issue in 1958 was carried to the Cabinet, and the Cabinet's decision was to limit CSO's responsibility to the "technical sphere" of census taking. Until the CSO is organizationally able to demonstrate the administrative capacity required for such a huge undertaking, the cabinet decision was probably a wise one. CSO does not have the administrative prestige, flexibility, and connections with the

hierarchy of provincial, district and local administrative cadres enjoyed by the Home Affairs Ministry and so essential to tapping and organizing provincial resources to come up with 160,000 (unpaid) enumerators.

Unfortunately the Home Affairs Ministry in typical bureaucratic style, so resented the attempted take-over by CSO, that it has been extremely difficult to work out a procedure whereby CSO would have responsibility for the technical sphere. This resentment persists to the present day, with Home Affairs being a major opponent to the passage of the Draft General Statistics Act, because of the additional authority it might give to the CSO. To secure passage of the Draft Act it will probably be necessary to remove the Home Affairs Ministry from the purview of the Act.

The point to be stressed here is that this internal struggle is long standing, bitter, and not subject to early solution. It will take the Government of Pakistan many years to work out a satisfactory solution. Any attempt on the part of AID to use leverage to secure a solution would probably fail; or would take so long that it would be too late to provide the necessary technical assistance in time. (One reason the Home Affairs Ministry did not request AID assistance in the 1961 Census was due to our close association with CSO as well as resentment at discussions of conditions required.) Perhaps this is tantamount to saying that the Government of Pakistan does not consider the availability of a few technicians as sufficient inducement to solve this bureaucratic problem.

#### IV. Progress to Date:

Detailed statements of the needs for adequate population census have been provided to the Census Organization for their study and consideration.\* Many of the recommendations made by the

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\*The following papers have been prepared and transmitted to the Census Organization, some at their request, some on our own initiative:

1. Detailed Estimated Time and Cost for Data Processing Equipment
2. 1971 Census Preliminary Working Table Outlines for Estimating Processing Time and Costs
3. Planning the Census of Population and Housing, 1971
4. Major Issues for the Population and Housing Census 1971
5. Working Paper on Census Planning
6. Geographic and Cartographic Work to Conduct the 1971 Census of Population and Housing
7. Estimated Requirements (By Year) of Major Items for the 1971 Census of Population and Housing

statistical advisors have been agreed to in principle, but not yet put into operation. Staffing patterns for planning staff have been drawn up, and recruitment started but at scales of pay too low to get competent staff. Recommended deadlines for appointment of staff are already behind by a year. Only one Assistant Commissioner for Geographic Planning has been successfully recruited. The budget for 1968-69 is under preparation, but may be slashed by Ministry of Finance.

Participant training positions offered in the past few years have not been utilized because of the lack of staff to select for training. (Only two persons are now in the States.) Our current offering of three training positions was out to one position in the recent retrenchment.

The Population Census Organization has requested the Secretary of Home Affairs to write to EAD for the services of a Census Advisor and a Geography Advisor. The Secretary has asked for verification that there is no one in Pakistan who can provide the requisite services. In addition to these two advisors, a data processing advisor will be required.

Most important of all, a Census Commissioner has not yet been appointed. Without the presence of a full time senior person whose sole responsibility is to organize, budget for, and fight for resources and staff, not much will be accomplished. In discussing with the Deputy Secretary of Home Affairs the possibility of commodity support through the Mission Family Planning Project, he replied that no decisions would be taken until the Census Commissioner was appointed. Although the Ministry of Home Affairs tried to get Ministry of Finance's approval to appoint the Census Commissioner by December 1967, Ministry of Finance refused authorization until July 1, 1968. The Establishment Division is now in process of identifying a CSP officer suitable for selection as Census Commissioner. (Ten years ago the Census Commissioner was not appointed until November 1959.)

One discouraging development in the population census picture is the recent delimitation of electoral units by the Election Commission. This Commission is specifically charged with taking a population count and determining the size of the reconstituted election units. By assigning this responsibility to the Census, the organization could have been strengthened (intercensal program) and a better end product assured. Similarly it is an unfavorable development that the Planning Board, and the

Family Planning Council, to mention two potential users of Census data, are disinterested in moving actively to assure a good census in 1971 but are settling for less adequate alternatives to generate the statistics required by their respective activities.

V. Alternative Strategies for Granting Assistance:

If the Ministry of Home and Kashmir Affairs were to request technical assistance in the conduct of the 1971 Census, the strategy would be to seek decisions and commitments from them as follows on the basis that an adequate full coverage census is needed:

1. Immediate appointment of a competent Census Commissioner with Secretariat status.
2. Immediate recruitment of planning staff at scales of pay which will attract experienced and competent persons. Conversion of the best of this staff to permanent status to perform intercensal operations, and planning for the Census of 1981.
3. Appointment of a Census Advisory Committee, preferably through the mechanism of the National Statistical Council, with representation of the CSO, the Provincial Bureaus of Statistics, the Ministry of Finance, the Planning Commissions of Center and Provincial Governments, and other interested agencies, including the Family Planning Council, to approve major policy issues, and through a Technical Sub-Committee to review pertinent technical details.
4. Preparation of realistic budget requirements to overcome deficiencies of the last two Censuses, with commitments to achieve:
  - a. Adequate coverage control through adequate cartographic preparation.
  - b. Substantive content geared to broader uses, particularly requirements of Central, Provincial and local planning bodies, administrative agencies, and the awakening market research needs of the business and industrial community of Pakistan.

- c. More detailed information through planned cross tabulations using the most modern tabulating facilities available to the Government of Pakistan.
  - d. A professionally sound quality check program of field operations through pretests and post enumeration surveys, and of office operations, so that the qualities and limitations of the Census may be objectively set forth.
  - e. More accurate data collection through improved training of field staff, better supervision, improved transportation facilities, travel allowances and honoraria or wages for the field staff.
5. Development and adherence to a Census calendar specifying deadlines for decisions, questionnaire design, instructions, pretests, printing orders, placing of machine orders, field staff acquisition, training, post enumeration surveys and editing, tabulating, and publication routines.

We cannot be confident that these decisions will be made and commitments lived upto. The most that can be reasonably expected if USAID supplies 3 advisors would be that we might have a chance to achieve a modest success in improving the 1971 census and the long run situation; we would essentially be replying on the quiet dictates of rational process as demonstrated by competent technicians in the conduct of the census and the census organization.

As an alternative to this approach it would be possible, if a sample enumeration can be anticipated to fulfill development needs for the USAID Mission, to make a contribution to the development of adequate statistics in Pakistan by a strategy somewhat as follows:

1. Seek the concurrence of the Central and Provincial planning authorities to the establishment of a Sample Enumeration Office for Planning and Development (SEOPAD) in either the CSO or in the West and East Pakistan Bureaus of Statistics to take advantage of the 100% population census to be carried out by the Ministry of Home and Kashmir Affairs by using it as a sample

frame for a sample survey specifically designed to meet planning and development needs. It is considered entirely possible that a sample of about one million persons in East and West Pakistan separately (about a 1 to 2% sample) would be adequate to provide the bulk of the statistical needs for planning and development. Local or other planning or administrative needs which require mauza or union councils figures would be served by the Home and Kashmir Affairs population census. The sample enumeration would provide useful information and in terms of 200-300 geographic areas in each province, probably tehsils in West Pakistan and sub-divisions in East Pakistan with further breakdown to get homogeneous areas. The sample will of course have even less sampling variability on a district or provincial basis.

2. Offer USAID assistance for funding expenses of the SEOPAD office or offices so that the sample enumeration can be taken immediately following the population census. The total cost for such a survey would be in the neighborhood of three million rupees plus commodities such as vehicles, paper, etc. This sample survey would duplicate some of the information in the population census but would be aimed at providing the additional information needed for the development effort which can only be obtained adequately by well trained enumerators and field enumerators. Instead of 160,000 enumerators as in the population census these sample surveys would require roughly 1,000 enumerators each in East and West Pakistan.
3. Offer to assist a SEOPAD office in CSO by providing a survey advisor, a geography advisor and a sampling advisor; or to SEOPAD offices in East and West Pakistan, by offering to provide to each office a statistical survey advisor and to both offices combined a sampling advisor; there would be no need of a data processing advisor since the data processing functions for the sample enumeration would be carried out on the CSO computer or the data processing divisions of the East and West Pakistan Bureaus of Statistics. With two SEOPADS sampling advisory service might be largely taken care of by the existing advisory team which has an agriculture sampling advisor in each wing, but CSO might have to help out.

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This proposed approach has a number of advantages. Most important of these is that it would foster the building up of an institution or institutions capable of carrying out sample enumerations since the SEOPADs would continue to do intercensal work after the sample enumeration following the population census. A high priority project, for sample, might be to run a similar sample enumeration in five years as well as to carry out a large number of other types of sample surveys which are needed for the development effort.

The second advantage would be that it would establish sampling as an important statistical tool. It is disheartening that Pakistan which has one of the best opportunities for the use of sampling techniques has used these techniques so little in the past. One primary advantage of a large country which Pakistan has is that its statistical work can be proportionately much less burdensome and more effective because it has the opportunity to use small sampling ratios.

A third advantage is that the proposal avoids the need for close cooperation between the Ministry of Home and Kashmir Affairs and the CSC or the Bureaus of Statistics.

A fourth advantage is that the commitments on the part of the Government of Pakistan would be clear cut and USAID assistance in terms of funding commodities or technical assistance would only be undertaken concurrently with Government of Pakistan performance.

A fifth advantage is that with possible USAID assistance in funding there would be the opportunity of establishing wage rates for enumerators and staff which would be capable of attracting and holding competent people.

In general this alternative offers the opportunity of achieving more than a modest success in 1971 demographic statistics and producing reasonably accurate demographic statistics needed for planning development purposes.

It is recognized that this alternative proposal introduces some element of duplication in statistical work. The tactic essentially avoids the necessity of attempting to overcome the inertia and the almost complete indifference of the Ministry of Home and Kashmir Affairs towards the needs for adequate population information.

In seeking concurrence to this alternative it would be necessary to get assurance from the Government of Pakistan that it would permit the publication of an estimate of the Population from the sample enumeration likely to differ from the Census total. It is a fact that the Government has insisted that there be only one "official" estimate of population for all purposes. It may be difficult to get assurance that the Government of Pakistan will be willing to follow the practice of other countries of publishing shortly after the full census a count based on a sample which differs from the full count.

Statistical Development Services - Input - Dollars & Rupees (obligation)

Dollar Support (000) APPROXIMATE

<u>FY</u>	<u>TOTAL</u>	<u>TECHNICIANS</u>	<u>PARTICIPANTS</u>	<u>COMMODITIES</u>	<u>LOCAL CURRENCY</u>
55*	12.7	-	12.7	-	-
56	83.0	47.1	35.9	-	-
57	297.1	38.8	35.3	222.0 <sup>1/</sup>	-
58	98.6	77.1	1.2	20.3	-
59	66.0	50.0	16.0	-	-
60	75.0	75.0	-	-	-
61	71.0	69.0	2.0	-	-
62	71.0	71.0	-	-	405.2
63	130.0	48.0	82.0	-	-
64	173.0	136.0	37.0	-	-
65	346.0	190.0	156.0	-	-
66	288.0	220.0	68.0	-	-
67	319.0	206.0	113.0	-	-
<b>TOTAL:</b>	<b>2030.4<sup>2/</sup></b>	<b>1229.0</b>	<b>559.1</b>		

<sup>1/</sup> Commodities consist of punching machines, tabulating machines and books for the Central Statistical Office

<sup>2/</sup> Actual disbursement thru December 31, 1967 \$1,934,163

\*1951 to 1954 funded under overall .4 program of the Mission

Long Term PASA Technicians: Development of Statistical Services

<u>Name</u>	<u>Title</u>	<u>Date of Arrival</u>	<u>Date of Departure</u>	<u>Assignment</u>
1. Thomas F. Corcoran	Statistical Advisor	11/15/51	5/15/53	Central Government
2. Samuel J. Dennis	Statistical Advisor	1/16/54	7/29/55	Central Government
3. John S. Benz	Industrial Statistical Advisor	6/29/55	6/15/57	Central Government
4. John E. Crawford	National Income Advisor	4/ 6/56	7/29/58	Central Government
5. Lowell T. Galt	Statistical Advisor	4/15/56	5/ 4/58	Central Government
6. J. Ree Goodman	Senior Sampling Advisor	8/15/57	7/15/60	Government of West Pakistan
7. Lloyd A. Prochnow	Provincial Statistical Advisor	2/15/58	2/15/60	Government of West Pakistan
8. Dorothy Cooke	Statistical Training Advisor	3/24/58	7/ 9/62	Central Government
9. Albert F. Hinrichs	Principal Statistical Advisor	9/15/59	9/15/61	Central Government
10. Merton V. Lindquist	Statistical Sampling Advisor	6/ 4/60	12/15/64	Government of East Pakistan
11. James J. Maslowski	Provincial Statistical Advisor	5/20/61	5/15/65	Government of West Pakistan
12. Lowell T. Galt	Principal Statistical Advisor	8/15/61	1/ 6/66	Central Government
13. Peter M. Cavas	Statistical Surveys Advisor	1/10/63	6/15/65	Central Government
14. Leo Jusseaume	Data Processing Advisor	11/11/63	10/11/65	Government of West Pakistan
15. Emery J. Porter	Data Processing Advisor	11/18/63	5/19/66	Central Government
16. Harold A. Pederson	Statistical Training and Research Advisor	11/25/63	10/15/65	Government of East Pakistan
	Demographic Research and Evaluation Advisor	1/ 5/66	4/ 1/68	Central Government
17. J. Hugh Rose	Senior Provincial Statistical Advisor	2/24/65	12/29/68	Government of East Pakistan
18. Bruno A. Schiro	Provincial Statistical Advisor	7/21/65	12/15/65	Government of West Pakistan
	Principal Statistical Advisor	1/ 6/66	8/29/68	Central Government
19. Donald G. Larson	Agricultural Statistical Advisor	2/15/65	6/14/69	Government of East Pakistan
20. LeRoy W. Schulz	Data Processing Advisor	3/ 2/65	10/22/66	Government of East Pakistan
	Senior Data Processing Advisor	10/23/66	6/24/69	Central Government
21. Martin E. Gilbert	Statistical Survey Advisor	7/16/65	7/26/67	Central Government
22. Bobbie E. Catlin	Data Processing Advisor	5/ 2/66	6/20/68	Government of West Pakistan
23. J. Edward Ely	Senior Provincial Statistical Advisor	9/18/66	9/18/68	Government of West Pakistan
24. John N. Adams	Data Processing Advisor	10/ 8/66	10/9 /68	Government of East Pakistan
25. Tyler R. Sturdevant	Agricultural Statistical Advisor	6/27/67	6/29/69	Government of West Pakistan

Foot Notes: (a) Unless a provincial government is designated, the advisors are accredited principally to the Federal Government of Pakistan.  
 (b) This table does not include short-term advisors to Pakistan.

Long Term PASA Technicians: Development of Statistical Services  
Tour of Duty Schedule

S.No.	Name	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
1.	Thomas F. Corcoran	11/15	5/15																	
2.	Samuel J. Dennis				1/16	7/29														
3.	John S. Benz					6/29		6/15												
4.	John M. Crawford						4/6		7/29											
5.	Lowell T. Galt						4/15		5/4											
6.	J. Ree Goodmar							8/15			7/15									
7.	Lloyd A. Prochnow								2/15		2/15									
8.	Dorothy Cooke								3/24				7/9							
9.	Albert F. Hinrichs									9/15		9/15								
10.	Merton V. Lindquist										6/4				12/15					
11.	James J. Maslowski										5/20					5/15				
12.	Lowell T. Galt										8/15						1/6			
13.	Peter M. Cayre												1/10			6/15				
14.	Leo Jusseaume												11/11			10/11				
15.	Emery J. Porter												11/18				5/19			
16.	Harold A. Pederson												11/25						4/1	
17.	J. Hugh Rose														2/24				12/29	
18.	Bruno A. Schiro														7/21				8/29	
19.	Donald G. Larson														2/15					6/14
20.	LeRoy Schulz														3/2					6/24
21.	Martin W. Gilbert														7/16				7/26	
22.	Bobbie E. Catlin															5/2				6/20
23.	J. Edward Ely															9/18				9/18
24.	John N. Adams															10/8				10/9
25.	Tyler R. Sturdevant																	6/27		6/29

Breakdown of Advisory Support to Central and Provincial Governments

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
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CENTRAL GOVERNMENT

Principal Stat. Advisor (3)  
 Statistical Advisor (Gen.) (3) -----  
 Industrial Stat. (1) -----  
 National Income (1) -----  
 Statistical Training (1) -----  
 Stat. Survey (2) -----  
 Data Processing (2) -----  
 Demog. Reseach & Eval. (1) -----

GOVERNMENT OF WEST PAKISTAN

Sr. Provincial Stat. Adv. (4) -----  
 Statistical Sampling (1) -----  
 Data Processing (2) -----  
 Agriculture Stat. (1) -----

GOVERNMENT OF EAST PAKISTAN

Sr. Provincial Stat. Adv. (1) -----  
 Statistical Sampling (1) -----  
 Statistical Training & Research (1) -----  
 Agriculture Stat. (1) -----  
 Data Processing (2) -----

Number of Participants and Man-Months of Training Time  
Statistical Services Project, By Years

<u>Year</u>	<u>No. of Participants</u>	<u>Man-Months</u>
1951	1	12
1952	8	96
1953	3	66
1954	2	23
1955	5	56
1956	9	109
1957	7	65
1958	2	6
1959	3	32
1960	-	-
1961	1	2
FY 1962	-	-
FY 1963	7	115
FY 1964	7	79
FY 1965	21	342
FY 1966	10	132
FY 1967	18	176
FY 1968	9	69
	<hr/>	<hr/>
Total:	113	1380
	<hr/>	<hr/>
FY 1963 - FY 1968	72	913
% of total training time since FY 63		66%

Breakdown of Participants by Central and Provincial Governments

<u>Year</u>	<u>GOP</u>	<u>GOEP</u>	<u>GOWP</u>	<u>Total</u>
1951	1	-	-	1
1952	5	1	2	8
1953	2	-	1	3
1954	2	-	-	2
1955	4	-	1	5
1956	1	6	2	9
1957	1	4	2	7
1958	2	-	-	2
1959	2	-	1	3
1960	-	-	-	-
1961	1	-	-	1
1962	-	-	-	-
1963	3	1	3	7
1964	2	2	3	7
1965	8	6	7	21
1966	5	3	2	10
1967	10	6	2	18
1968	6	2	1	9
<hr/>				
Total:	55	31	27	113
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Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position at Time of Selection</u>	<u>Previous Employment As of April, 1959</u>	<u>Present Employment As of Nov., 1967</u>
<u>1951</u>					
1. Abdur Rashid	Census Methods & Procedures	12 Months U.S.A.	M.L.A. Constituent Assembly	Census Commissioner 1961 (Population Census)	Secretary, Election Commission, Rawalpindi
<u>1952</u>					
2. Abdul Ghafoor	Financial Statistics	12 Months U.S.A.	Statistician, State Bank of Pakistan, Karachi	Asst. Director, Statistics Dept., State Bank of Pakistan, Karachi	Deputy Director, Statistics Department, State Bank of Pakistan, Karachi
3. Shamsul Haq Hasnie	TAA 462-146 Trade & Shipping Statistics	13 Months U.S.A.	Economic Investigator, CSO, Karachi	Asst. Director, Dept. of Trade Promotion & Commercial Intelligence, Karachi	Asst. Secretary, Karachi Cotton Association Ltd., Karachi
4. Mohammad Khalid Hayat Khan	TAA 462-149 Vital Statistics	13 Months U.S.A.	Statistical Officer, Dept. Public Health Services, Govt. of West Pakistan, Lahore	Senior Statistical Officer, Directorate of Health, Govt. of West Pakistan, Lahore	Director, Social Science Research Center, University of Panjab, Lahore
5. Rabiul Hassan Sherif	TAA 462-150 Price Statistics & Cost of Living	12 Months U.S.A.	Chief Statistical Officer, CSO, Karachi	Chief Statistical Officer, CSO, Karachi	Chief Statistical Officer, Gas, Electricity & Mining Division, CSO, Karachi
6. Mohammad Yasin	TAA 462-151 Labor Statistics	14 Months U.S.A.	Asst. Chief Economist (Statistics), National Planning Commission, Karachi	Asst. Chief, Planning Commission, Karachi	Deputy Chief, Manpower Division, Planning Commission, Islamabad
7. Taufiq M. Khan	COM 53-OBE-17 National Income Statistics	12 Months U.S.A.	Progress Officer, Economic Affairs Division, Karachi		Acting Director, Pakistan Institute of Development Economics, Karachi
8. Irshad Ali Shah	Coinage	8 Months U.S.A.	Chemist, Pakistan Mint Lahore	Chemist, Pakistan Mint Lahore	
9. M. A. Choudhury	Sample Surveys	12 Months U.S.A.		Statistician, East Pakistan Statistical Board	Head Statistician, Bureau of Statistics, Govt. of

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position at Time of Selection</u>	<u>Previous Employment As of April, 1959</u>	<u>Present Employment as of Nov., 1967</u>
17. Shaukat Ali	50321 Price Statistics	12 Months U.S.A.	Statistical Officer, CSO, Karachi	Statistical Officer, CSO, Karachi	Left Government Service
18. Zia Hasan Choudhri	50303 National Income	12 Months U.S.A.	Research Officer, CSO, Karachi	Chief Statistical Officer, CSO, Karachi	Chief Statistical Officer (Liaison), CSO, Dacca
19. Nazir Shamsi	50110 Census	9 Months U.S.A.	Asst. Statistical Officer, Ministry of Home Affairs, Karachi	Census Officer, Ministry of Home Affairs, Karachi	Statistician, Central Board of Revenue, Ministry of Finance, Karachi
<u>1956</u>					
20. Bahauddin Ahmed	60246 Population Census	12 Months U.S.A.	S.D.O. & Sub-Divisional Magistrate, Barisal Bakarganj, East Pakistan	Regional Controller of Food, Barisal, District Bakarganj, East Pakistan	Deputy Secretary, Education Department, Govt. of East Pakistan, Dacca
21. Tofailuddin Ahmed	60251 Price Statistics	12 Months U.S.A.	Asst. Statistician, East Pakistan Statistical Board, Dacca	Statistician, East Pakistan Provincial Statistical Board, Dacca	Research Officer, O & M, S&GA Department, Govt. of East Pakistan, Dacca
22. Asghar Ali	60252 Theory of Statistics	12 Months U.S.A.	Lecturer in Statistics, Institute of Statistics, University of Panjab, Lahore	Lecturer in Statistics, University of Panjab, Lahore	Lecturer in Statistics, University of Panjab, Lahore
23. Mohammed Hossain	60252 Price Statistics	13 Months U.S.A.	Economist, Statistical Bureau, Govt. of East Pakistan, Dacca	Economist, East Pakistan Planning Board, Dacca	Deputy Chief, Planning Department, Govt. of East Pakistan, Dacca
24. A.N.H. Shamsul Huque	60252 Industrial Statistics	12 Months U.S.A.	Intelligence Officer, Statistical Board, Govt. of East Pakistan	Intelligence Officer, East Pakistan Provincial Statistical Board, Dacca	Retired in 1966

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position at Time of Selection</u>	<u>Previous Employment As of April, 1959</u>	<u>Present Employment as of Nov., 1967</u>
<u>1953</u>					
10. C. A. Majid	Methods of Economic Survey and Research	12 Months U.S.A.	Research Officer, Economic Affairs Division, Karachi	% Economic Commission for Asia and Far East, Sala Santitham Bangkok, Thailand	Assitant Economic Advisor, Economic Affairs Division, Islamabad
11. Mohammad Fasihuddin	TAA 462-152	12 Months U.S.A.		Asst. Director, Dept. of Agricultural Economics & Statistics, Ministry of Food & Agriculture, Karachi	Reader in Statistics, University of Karachi, Karachi
12. Mohammad M. Siddiqui	TAA 462-157 Statistics Sampling (Ph.D.)	42 Months U.S.A.	Senior Lecturer, University of Panjab, Lahore	Professor, Mathematical Statistics, University of Panjab, Lahore	Professor of Mathematical Statistics, Colorado State University
<u>1954</u>					
13. M. A. Sabzwari	TAA 462-193 Statistics	12 Months U.S.A.	Economic Investigator, CSO, Karachi	Instructor, V-AID Academy, Peshawar	Chief Statistical Officer, Field Services Division, CSO, Karachi
14. M. Yusuf	TAA 462-193 Statistics	11 Months U.S.A.	Chief Statistical Officer, Ministry of Economic Affairs, Karachi	Chief Statistical Officer, CSO, Karachi	Director of Statistics, Central Army Statistics Organization, GHQ, Rawalpindi
<u>1955</u>					
15. Syed Rahmat Ali	50116 Industrial Disputes & Trade Union Statistics	12 Months U.S.A.	Research Officer, Statistics, Ministry of Labor, Karachi	Research Officer, Dept. of Central LabourCommittee, Ministry of Health, Labour & Social Welfare, Karachi	Chief Statistical Officer, Labor Division, CSO, Karachi
16. Mir Aslam Khan Afridi	50357 Agriculture Crop Estimates & Forest	11 Months U.S.A.	Agriculture Statistician, Tarnab Farm, Peshawar	Agriculture Statistician, Tarnab Farm, Peshawar	Development Academy, Peshawar

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position at Time of Selection</u>	<u>Previous Employment As of April, 1959</u>	<u>Present Employment As of Nov., 1967</u>
25. Abdul Majid	60255 Agricultural Statistics	12 Months U.S.A.	Asst. Statistical Officer, Directorate of Jute Prices, Narayanganj, Dacca, East Pakistan	Statistical Officer, Directorate of Jute Prices, Narayanganj, Dacca, East Pakistan	Deputy Director, Jute Board, Govt. of Pakistan, Dacca
26. Muhammad Sadiq	60247 Statistical Administration	12 Months U.S.A.	Personal Assistant to the Director of Statistics Govt. of East Pakistan, Dacca	Personal Assistant to the Director of Statistics Govt. of East Pakistan, Dacca	Personal Assistant to the Director of Statistics Govt. of East Pakistan, Dacca
27. Nasim Mahmood Sadiq	60250 National Income Statistics	12 Months U.S.A.	Statistical Officer, National Sample Survey, Regional Office, Lahore	Survey Officer, National Sample Survey, Regional Office, Lahore	Chief Statistical Officer, National Accounts Division CSO, Karachi
28. Jowher Ali Talukdar	60253 Industrial Statistics	12 Months U.S.A.	Research Officer, CSO, Karachi	Chief Research Officer, CSO, Karachi	Chief Statistical Officer (Liaison), CSO, Lahore
<u>1957</u>					
29. Mohammad Shamsuddin	70645 Population Census Processing	11 Months U.S.A.	Inspector, Provincial Statistical Board, Govt. of East Pakistan, Dacca	Inspector, Provincial Statistical Board, Dacca	Statistician, East Pakistan Family Planning Board, Dacca
30. Syed Munir Husain	70646 Census Planning	13 Months U.S.A.	Asst. Commissioner, Nowshera, West Pakistan	Deputy Commissioner, Hazara, Abbotabad, West Pakistan	
31. Asadus Zaman	70647 Vital Statistics and Mobility	11 Months U.S.A.	Asst. Statistician, Provincial Statistical Board, Govt. of East Pakistan, Dacca	Asst. Statistician, Provincial Statistical Board, Govt. of East Pakistan, Dacca	Statistician, Bureau of Statistics, Govt. of East Pakistan, Dacca

Participants: Development of Statistical Services

<u>Name</u>	<u>FIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position at Time of Selection</u>	<u>Previous Employment As of April, 1959</u>	<u>Present Employment as of Nov., 1967</u>
32. Ramjan Ali Khan Majlis	70648 Vital Statistics and Mobility	11 Months U.S.A.	Asst. Statistician, Provincial Statistical Board, Govt. of East Pakistan, Dacca	Asst. Statistician, Provincial Statistical Board, Govt. of East Pakistan, Dacca	Statistician, Vital Statistics, Bureau of Statistics, Govt. of East Pakistan, Dacca
33. Aijaz Ahmed Shaikh	70650 Census Tabulation	12 Months U.S.A.	Accounting Machine Supervisor, CSO, Karachi	Accounting Machine Supervisor, CSO, Karachi	Supervisor, Data Processing Division, CSO, Karachi
34. Mohammad Ziauddin	70651 Administration of Statistical Education	3 Months U.S.A.	Professor of Statistics & Director of Institute of Statistics, Lahore	Professor of Statistics & Director of Institute of Statistics, Lahore	Deceased
35. Q. M. Hussain	70651 Administration of Statistical Education	3 Months U.S.A.	Professor & Head of Statistics Department, University of Dacca, Dacca	Professor & Head of Statistics Department, University of Dacca, Dacca	Retired Jan. 1, 1966
	<u>1958</u>				
36. M. A. Rauf	80200 Police Statistics	2 Months U.S.A.	Asst. Superintendent of Police, Karachi	University of Panjab, Lahore	Asst. Superintendent of Police, Karachi
37. Ziauddin	80774 Agricultural Census Development	4½ Months		Census Commission	
	<u>1959</u>				
38. Aijaz Ahmad Khan	90041 Census Processing	8 Months U.S.A.	Statistical Investigator, CSO, Karachi	Statistical Investigator, CSO, Karachi	Statistical Research Officer, C.D.A., Islamabad
39. Mohammad Fasihuddin	90076 National Income	12 Months USA	Research Officer, Economic Affairs Division, Karachi	Research Officer, Economic Affairs Division, Karachi	Secretary, Cotton Board, Ministry of Commerce, Karachi

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position at Time of Selection</u>	<u>Previous Employment as of April, 1959</u>	<u>Present Employment as of Nov., 1967</u>
40. Mehd. Rafiq Chaudhuri	90132 Vital Statistics Demography and Sampling	12 Months U.S.A.	Statistical Officer Institute of Hygiene & Preventive Medicine, Lahore	Demographer in Bio-Statistics Institute of Hygiene and Preventive Medicine, Lahore	
<u>1961</u>					
41. Lt. Col. Nazir Ahmed	10035 Observation	2 Months U.S.A.	Director-General, CSO, Karachi	Director-General, Central Statistical Office, Karachi	UN Statistical Expert Govt. of Saudi Arabia, Riyadh
<u>1962</u>					
42. Aminur Rahman Khan*	MSC in Hygiene and Vital Statistics	12 Months U.S.A.	Statistical Officer, Bureau of Agriculture Statistics, Govt. of East Pakistan, Dacca		Deputy Director, Family Planning Board, Govt. of East Pakistan, Dacca
<u>1963</u>					
43. Mehd. Yusuf Mia	30423 Sample Survey Methods and Techniques (M.S.)	43 Months U.S.A.	Asst. Director of Agriculture Statistics, Govt. of East Pakistan, Dacca		Development Officer (Research) East Pakistan Industrial Development Corp., Dacca
44. Abdul Ghafoor Khan	30385 National Accounts	12 Months U.S.A.	Acting Chief, National Income Division, Karachi		Chief Statistical Officer, National Income Division, CSO, Karachi
45. Wasi Ahmed Abbasi	30368 Tabulation Systems Management	13 Months U.S.A.	Asst. Director, Office of Census Commissioner, Karachi		Chief, Data Processing Division, CSO, Karachi
46. Akhlaq Ahmad	30420 Tabulation Systems Management	13 Months U.S.A.	Statistical Officer, % Additional Chief Secretary to the Govt. of Pakistan, Lahore		Statistical Officer, Data Processing, Bureau of Statistics Govt. of West Pakistan, Lahore

\*Financed under other project, but relates to statistical activity.

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position at Time of Selection</u>	<u>Previous Employment As of April, 1959</u>	<u>Present Employment As of Nov., 1967</u>
47. Mohd. Zubair Siddiqui	30422 Sample Survey Methods & Techniques	11 Months U.S.A.	Asst. Director, Bureau of Statistics, Planning & Development Department Govt. of West Pakistan, Lahore		Asst. Director, Bureau of Statistics, Planning & Development Department, Govt. of West Pakistan, Lahore
48. Syed A. Ghani Kirmani	30421 Survey Operations Planning	12 Months U.S.A.	Statistical Officer, WAPDA, Lahore		Statistical Officer, WAPDA, Lahore
49. Taswirul Islam	30369 Graphic Presentation & Reproduction Techniques	12 Months U.S.A.	Supervisor Reproduction Unit CSO, Karachi		Chief Technical Officer Reproduction Unit CSO, Karachi
<u>1964</u>					
50. Mohd. Izharul Haq	40374 Distributive Business Statistics	12 Months U.S.A.	Chief Statistical Officer CSO, Karachi		Chief Statistical Officer Business Communication & Special Studies Division, CSO, Karachi
51. Mozher Ali Miah	40373 Price Statistics	12 Months U.S.A.	Statistical Officer CSO, Karachi		Chief Statistical Officer Industry Division CSO, Karachi
52. Golam Kibria Chaudhury	40416 Machine Tabulation	7 Months U.S.A.	Superintendent of Machine Tabulation, Bureau of Statistics, Govt. of East Pakistan, Dacca		Superintendent Machine Tabulation, East Pakistan Bureau of Statistics, Dacca
53. Eaqub Ali Khan	40494 Price Statistics	13 Months U.S.A.	Inspector, East Pakistan Bureau of Statistics Dacca		Publication Officer, East Pakistan Bureau of Statistics Dacca

Participants: Development of Statistical Services.

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position Time of Selection</u>	<u>Previous Employment As of April, 1959</u>	<u>Present Employment As of Nov., 1967</u>
54. Mehd. Jamil Butt	40439 Statistical Publication & Presentation	12 Months U.S.A.	Statistical Officer Planning & Development Department, Bureau of Statistics, Govt. of West Pakistan, Lahore		Statistical Officer Bureau of Statistics Govt. of West Pakistan Lahore
55. Mehd. Siddiq Chaudhury	40372 Agriculture Crop Reporting	11 Months U.S.A.	Asst. Statistical Officer, Department of Agriculture, Govt. of West Pakistan, Lahore		Asst. Statistical Officer Agriculture Department Govt. of West Pakistan Lahore
56. Mehd. Aslam	40375 Sampling Methods & Techniques	12 Months U.S.A.	Statistical Officer Bureau of Statistics Planning & Development Department, Govt. of West Pakistan, Lahore		Statistical Officer Bureau of Statistics Planning & Development Department, Government of West Pakistan, Lahore
<u>1965</u>					
57. M. Zahurul Haq Qureshi	50254 Survey Management and Operations	12 Months U.S.A.	Asst. Statistical Officer Office of Deputy Director of Agriculture, Sariab Road, Quetta		Asst. Statistical Officer Department of Agriculture Govt. of West Pakistan Lahore
58. Muhammad Akhtar	50447 Quantative Research Methods (M.S.)	24 Months U.S.A.	Lecturer in Statistics Department of Economics University of Peshawar Peshawar		Lecturer in Economics & Statistics, University of Peshawar, Peshawar
59. Laeeq Ahmad	50252 Tabulation Systems Management	11 Months U.S.A.	Statistical Officer Planning & Development Department, Govt. of West Pakistan, Lahore		Statistical Officer Data Processing Bureau of Statistics Government of West Pakistan Lahore

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position Time of Selection</u>	<u>Previous Employment As of April 1959</u>	<u>Present Employment As of Nov., 1967</u>
68. Ghulam Mujtaba Mirza	50265 Survey Management & Operations	12 Months U.S.A.	Regional Office Supervisor, CSO Karachi		Statistical Officer Coordination & Development Division, CSO, Karachi
69. K.E. Poonawalla	50264 National Income (Flow of Funds Acctng.)	12 Months U.S.A.	Asst. Director of Statistics, State Bank of Pakistan, Karachi		Deputy Director Statistics Department State Bank of Pakistan Karachi
70. Mohd. Ahmed Sheikh	50310 Statistical Coordina- tion & Development	13 Months U.S.A.	Statistical Officer Coordination & Development Division, CSO, Karachi		Statistical Officer Coordination & Development Division, CSO, Karachi
71. Sh. Abdul Guffar	50340 Labor and Manpower Statistics	12 Months U.S.A.	Asst. Statistical Officer East Pakistan Bureau of Statistics, Dacca		Regional Research Officer Bureau of Statistics, Govt. of East Pakistan, Dacca
72. Mohd. Shariful Islam*	50341 Agriculture Statistics	*3 Months U.S.A.	Statistician, Bureau of Statistics, Directorate of Agriculture, Govt. of East Pakistan, Dacca		Statistician, Bureau of Statistics Directorate of Agriculture Govt. of East Pakistan Dacca
73. Mohd. Ahsanullah	50342 Experimental Statistics	24 Months U.S.A.	Research Officer, Institute of Statistical Research & Training, University of Dacca Dacca		In Training
74. A.B.M. Fattah	50343 Statistical Training Methods	13 Months U.S.A.	Asst. Director, Directorate of Industry, Govt. of East Pakistan, Dacca		Assistant Director, Directorate of Industry, Government of East Pakistan, Dacca

\*Returned due to sickness

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position Time of Selection</u>	<u>Previous Employment As of April 1959</u>	<u>Present Employment As of Nov., 1967</u>
60. Mazher Hussein	50567 Applied Statistics	36 Months U.S.A.	Research Supervisor University of Punjab Lahore		In Training
61. Munir Ahmed	50257 Experimental Statistics	36 Months U.S.A.	Lecturer, University of Karachi, Karachi		In Training
62. S.T.M. Naqvi	50256 Experimental Statistics	36 Months U.S.A.	Agriculture Statistician Agriculture College Tandojam		In Training
63. Nasrullah A. Sheikh	50339 Construction Statistics	12 Months U.S.A.	Statistical Officer CSO, Karachi		Statistical Officer Construction Division CSO, Karachi
64. Mohammad Muzaffar Ali	50300 Tabulation System Management	13 Months U.S.A.	Chief Statistical Officer Data Processing Division CSO, Karachi		Computer Systems Analyst Habib Bank, Karachi
65. Ghulam Mustafa	50299 Analysis of Industrial Statistics	12 Months U.S.A.	Chief, Industry Division CSO, Karachi		Statistical Officer Industry Division CSO, Karachi
66. M.A. Jabbar	50268 Statistical Training Methods	13 Months U.S.A.	Survey Officer CSO, Karachi		Survey Officer Training Division CSO, Karachi
67. Mohd. Hamid Siddiqui	50266 National Income	12 Months U.S.A.	Statistical Officer CSO, Karachi		Statistical Officer National Income Division CSO, Karachi

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position Time of Selection</u>	<u>Previous Employment As of April 1959</u>	<u>Present Employment As of Nov., 1967</u>
75. Nazrul Islam Bhuiya	50344 Industrial Statistics	12 Months U.S.A.	Deputy Director of Industries (Industrial Survey), Govt. of East Pakistan, Dacca		Research Officer, Bureau of Statistics, Govt. of East Pakistan, Dacca
76. Tasiruddin Ahmed	50345 Tabulation Systems Management	12 Months U.S.A.	Data Processing Division, Bureau of Statistics, Govt. of East Pakistan, Dacca		Asst. Statistician, CMI Section, Bureau of Statistics Govt. of East Pakistan, Dacca
77. Mohammad Ashraf Khokhar	50253 Agriculture Statistics	12 Months U.S.A.	Asst. Statistical Officer Directorate of Agriculture Govt. of West Pakistan Lahore		Asst. Statistical Officer, Department of Agriculture Govt. of West Pakistan Lahore
<u>1966</u>					
78. Syed Mohammad Auqil	60280 Foreign Trade Statistics	12 Months U.S.A.	Research Officer CSO, Karachi		Research Officer, Foreign Trade Div. CSO, Karachi
79. Akhtar Mohd. Shah Khan	60281 Economic Census & Surveys (Small Industry)	12 Months U.S.A.	Statistical Officer CSO, Karachi		Statistical Officer, Small Industry Branch, CSO Karachi
80. Muhammad Sadeque Zaman	60282 Methods Research	12 Months U.S.A.	Survey Officer CSO, Karachi		Survey Officer, Field Services Division, CSO, Karachi
81. Abdul Rashid	60283 Tabulation Systems Management	12 Months U.S.A.	Survey Officer CSO, Karachi		Survey Officer, Data Processing Division, CSO, Karachi
82. Mohammad Mazhar	60297 Labor & Manpower Statistics	12 Months U.S.A.	Statistical Officer, Directorate of Labor Welfare, Govt. of West Pakistan, Lahore		Statistical Officer, Directorate of Labor Welfare, Govt. of West Pakistan, Lahore

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Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position Time of Selection</u>	<u>Previous Employment As of April 1959</u>	<u>Present Employment As of Nov., 1967</u>
83. Muntaz Ahmed	60363 Statistical Coordination & Development	12 Months U.S.A.	Statistical Officer CSO, Karachi		Statistical Officer, National Statistical Co. Secretariat, Karachi
84. Daudur Rehman	60428 Household Sample Survey	12 Months U.S.A.	Research Officer Bureau of Statistics Govt. of East Pakistan Dacca		In Training
85. Khadija Khatun	60429 Training in Computer Science	24 Months U.S.A.	Instructor, Institute of Statistical Research & Training, University of Dacca, Dacca		In Training
86. A.K.M. Abdus Sattar Bhuiyan	60430 Data Processing	12 Months U.S.A.	Supervisor, Bureau of Statistics, Govt. of East Pakistan, Dacca		Junior Systems Analyst Data Processing Section Bureau of Statistics Govt. of East Pakistan Dacca
87. S. Shabbar Mehdi Jafri	60431 Data Processing	12 Months U.S.A.	Statistical Officer Pakistan Western Railway Headquarters, Lahore		Statistical Officer Pakistan Western Railway Headquarters, Lahore
	<u>1967</u>				
88. Muhammad Hussain	70360 Flow of Funds Accounting	12 Months U.S.A.	Statistical Officer State Bank of Pakistan Karachi		In Training

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position Time of Selection</u>	<u>Previous Employment As of April 1959</u>	<u>Present Employment As of Nov., 1967</u>
89. Abdul Hamid Paul	70361 Manufacturing Industrial Statistics	12 Months U.S.A.	Statistical Officer Planning & Development Department, Govt. of West Pakistan, Lahore		In Training
90. Khondkar Nizamuddin	70400 Geographic Training	12 Months U.S.A.	Sr. Lecturer in Geography University of Dacca, Dacca		In Training
91. Ali Asghar Mohd. Hashmi	70408 Agriculture Statistics	12 Months U.S.A.	Statistical Officer Agriculture Directorate Govt. of East Pakistan Dacca		In Training
92. Moksud Ahammed	70409 Transportation Statistics	12 Months U.S.A.	Regional Survey Officer East Pakistan Bureau of Statistics, Dacca		In Training
93. Mehammad Ilyas	70436 Statistical Standards in Census & Survey Operations	12 Months U.S.A.	Survey Officer CSO, Karachi		In Training
94. Mohd. Amirul Islam Khan	70437 Printing & Publication Statistics	12 Months U.S.A.	Stat. Investigator, East Pakistan Bureau of Statistics, Dacca		In Training
95. Mohammad Asaf Khan	70438 Tabulation Systems Management	12 Months U.S.A.	Statistical Officer CSO, Karachi		In Training
96. A.Z. Noorul Islam Sardar	70438 Tabulation Systems Management	12 Months U.S.A.	Stat. Investigator CSO, Karachi		In Training
97. Abdus Sattar Gill	70439 Census Methods Research	12 Months U.S.A.	Survey Officer CSO, Karachi		In Training

Participants: Development of Statistical Services

<u>Name</u>	<u>PIO/P No. &amp; Field of Training</u>	<u>Duration &amp; Place</u>	<u>Previous Position Time of Selection</u>	<u>Previous Employment As of April 1959</u>	<u>Present Employment As of Nov., 1967</u>
98. Akhlaque Hossain Kazi	70440 Census Administrative Planning	12 Months U.S.A.	Asst. Director SCARP-1 Land & Water Development Board, Lahore		In Training
99. Rashid Ahmad Nasir	70441 Computer Systems Programming	12 Months U.S.A.	Stat. Investigator CSO, Karachi		In Training
100. Muzammil Hussain	70442 Sampling Research	12 Months U.S.A.	Chief Survey Officer CSO, Karachi		In Training
101. Riazuddin Ahmed	70498 Census Procedural Planning	12 Months U.S.A.	Statistical Officer Min. of Home & Kashmir Affairs, Islamabad		In Training
102. Mohd. Hafiz Sheikh	70465 Household Workshop Training Program	2 Months U.S.A.	Chief Statistical Officer CSO, Karachi		Chief Statistical Officer CSO, Karachi
103. Saiyed Rahmat Ali	70475 Household Workshop Training Program	2 Months U.S.A.	Chief Statistical Officer CSO, Karachi		Chief Statistical Officer CSO, Karachi
104. Mohiuddin Ahmed	70551 Household Workshop Training Program	2 Months U.S.A.	Statistician, East Pakistan Bureau of Statistics Dacca		Statistician, East Pakistan Bureau of Statistics Dacca
105. Abdus Salek	70551 Household Workshop Training Program	2 Months U.S.A.	Statistician, East Pakistan Bureau of Statistics Dacca		Statistician, East Pakistan Bureau of Statistics Dacca

NOTE: The participants from FY 1951 thru FY 1954 were financed under Point Four Program.

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C. Project Accomplishments/Outputs

1. Introduction

Accomplishment in statistical development has been substantial despite the uniquely unfavorable situation for the development of statistics in Pakistan as compared to other countries and the rather small in-put of statistical assistance over a long period of time. By fiscal years the advisory support has been:

<u>Year</u>	<u>No. of Advisors</u>	<u>Year</u>	<u>No. of Advisors</u>	<u>Year</u>	<u>No. of Advisors</u>
1952	1	1958	3	1964	7
1953	1	1959	3	1965	7
1954	2	1960	3	1966	9
1955	2	1961	4	1967	9
1956	2	1962	4	1968	9
1957	3	1963	4		

Technical assistance was of a low level of from one to three advisors through fiscal 1960 and it was not until 1961 that technical assistance of any consequence was started in the Provincial Wings. The volume of technical assistance has been at a substantially lower level than that provided to other countries only one-tenth to one half as large as Pakistan in terms of number of persons employed on statistical work. The following brief summary of accomplishments to date in major areas includes many improvements made during the early period of very limited technical assistance:

2. Increase in Pakistani Staff at Center and Provinces

The growth of staff in the three focal statistical agencies has been as follows:

<u>Year</u>	<u>Central Stat. Office</u>	<u>East Pakistan Bureau of Stat.</u>	<u>West Pakistan Bureau of Stat.</u>
1959	100	190	0
1964	500	220	50
1968	800	350	60

From 1951 to 1958, the CSO operated without a Director General.

U.S. Advisors during this period were assigned the defacto responsibilities of the office. A similar situation occurred in BOS of GOWP in the years 1963-64. They developed the organizational framework which the CSO evolved into in later years as functions and staff expanded. They were responsible for the initial introduction of National Income Accounting, Industrial statistics (including the Index of Industrial Production), price statistics, labor force statistics and family income and expenditure surveys.

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There has been a comparable increase in the staff and resources for statistical work in the departments of agriculture of each of the wings which are the principal sources for general purpose agricultural statistics. A recent development is the provision of \$500,000 for improvements in crop reporting in West Pakistan by the West Pakistan Department of Agriculture.

### 3. Statistical Coordination Councils

An important step towards the establishment of statistical standards and the coordination of statistical work in East and West Pakistan and the Central Government was the establishment of the National Statistical Council in 1962 and a Provincial Statistical Council in East Pakistan in 1967. Statistical standards and coordination are still far from being adequate.

The NSC operating through a Technical Advisory Committee and Working Panels and groups on all major subject areas of statistics, such as Industrial Statistics, Labor Statistics, Distribution Trade Statistics, provide the opportunity to seek agreement on standards and procedures, and to resolve conflicts. For example, a working group has been appointed recently to establish common standards for both East and West Pakistan on edit procedures, tolerance limits for non-response and computation, on the Census of Manufacturing Industries.

The legal basis for the NSC is provided for in the Draft General Statistics Act, prepared by U.S. Advisors, and still in process of clearance for presentation to the National Assembly. This act in addition provides the legal basis of all statistics work in Pakistan, establishes the highly essential confidentiality of response principle, and provides for the appointment of a competent statistical authority with responsibility for statistical development in the Central Government and each of the Provinces.

### 4. Censuses

#### a. Population 1951 and 1961 and Housing 1961

Technical assistance in this area has been small in large part because the responsibility is in the Ministry of Home and Kashmir Affairs which has no permanent interest in demographic statistics and has essentially no statistical staff. The 1971 census of population and the census of housing appears likely to be largely unsuccessful in terms of providing accurate data. Nevertheless the publication of 1961 results was immensely improved through part time advisory services and the use of CSO expertise. Especially notable was the preservation in the Administrative Report of the tremendous handicaps and difficulties encountered because of inadequate planning.

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In the preparation for the 1971 Census of Population a series of papers has been prepared for consideration of the Home Affairs Ministry. These include: (1) detailed Estimated Time and Cost for Data Processing Equipment (2) 1971 Census Preliminary Working Table Outlines for Estimating Processing Time and Costs, (3) Planning the Census of Population and Housing, 1971 (4) Major issues for the Population and Housing Census, 1971 (5) Working paper on Census Planning (6) Geographic and Cartographic Work to conduct the 1971 Census of Population and Housing (7) Estimated requirements (by year) of major items for the 1971 Census of Population and Housing.

b. Agriculture

In addition to contributing to the break through on probability sampling, U.S. support provided data processing equipment and established the principle of a post-enumeration survey. The situation here is similar to that of the population and housing since the responsibility for the agriculture census is in the Ministry of Agriculture.

In East Pakistan, after a five year period of technical assistance (the usual gestation period) objective measurement of current production of jute and rice on a probability sample basis and with crop cutting observations have been established as the official statistics superseding the sight estimates previously used. Sight observations normally have a built-in downward bias and while they measure a direction of year-to-year changes in yield, they are a very poor measure of magnitude of these changes. Work on similar objective measurements in West Pakistan has been started on rice, cotton, sugarcane, and wheat but is not yet well established; technical assistance started a year ago.

c. Manufacturing Industries

The amount of technical assistance in this area has also been small largely because the basic responsibility is in the East and West Pakistan Directorates of Industries. The quality of the censuses have in fact declined during the early 1960s when responsibility was transferred to the Provincial Bureaus.

d. Government Employees

A census of government employees in the Central Government and the Wings was completed in 1964.

Statistics on employment in establishments are the responsibility of the Provincial Directors of Labor Welfare where little technical assistance has been given and the data appear to be/questionable quality.

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5. Statistical Series

a. National Accounts

Technical assistance including participant training has been substantial and national accounts were established very early in the statistics program of Pakistan. The outstanding difficulty with the data is the lack of a sound infra-structure of the whole spectrum of basic statistics which are essential to achieving adequate system of national accounts.

A National Income Commission was established in 1962 to conduct a thorough investigation in the problems and deficiencies in national income accounting. This report proved a substantial impetus to the provision of resources to statistical work through its detailed inventory of the gaps in the statistical system.

b. Population Growth Estimates and Vital Statistics

The Population Growth Estimation Project, a joint venture of the Central Statistics Office and the Pakistan Institute of Development Economics, has achieved worldwide recognition for its pioneering work in measuring births and deaths on a sample basis. Considerable technical assistance has been given in this field. Also notable is the step taken by the CSO and the Government of Pakistan to continue this work on an improved and permanent basis, with US AID support.

Two years of advisory assistance has been provided to the Family Planning Program to improve its capacity to install reporting and evaluation systems.

c. Labor and Manpower Statistics

Considerable advances have been made in this area principally through the National Sample Survey taken by the CSO on a quarterly basis beginning in 1959. This represented the first real breakthrough in probability sampling procedure in Pakistan on a national basis. It is heartbreaking to review the horrors of administrative clearances that were experienced in getting this survey into the field. The year 1959 marked the beginning of CSO's field staff and the establishment of field offices.

d. Foreign Trade Statistics

Substantial improvements in detail, accuracy and release dates have been achieved principally through the use of data processing equipment provided by the United States, and in the switch over to shipping bills as the source documents.

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6. Use of Probability Samples

Despite the difficulties of introducing probability sampling in an area oriented toward full counts which characterize administrative and administrative by-product statistics, substantial progress has been made in the introduction of probability sampling in the National Sample Survey, in the population growth survey, in crop reporting and in other areas. Some sort of breakthrough also was accomplished in the 1959-60 agricultural census which was based on a probability sample even though the sample was grossly inefficient because of opposition to sampling techniques.

7. Data Processing Equipment

a. Center Government

US AID provided a total of \$204,000 mostly in fiscal year 1958 and almost entirely for office machines to equip CSO in data processing, and reproduction equipment, and Census of Agriculture in data processing and transportation equipment. There were minor purchases up to 1957 of books for the CSO library.

Data Processing capability on conventional equipment is well established in the CSO and is in process of development in East and West Pakistan. The CSO is well on the way to obtaining a computer within the next six to nine months and has started to train programmers and systems analysts.

b. Provincial Governments

West Pakistan will apparently acquire a computer within the next year or two and is starting to plan for such an installation. East Pakistan is not yet seriously considering acquiring a computer but is already doing some work on a computer located in Dacca.

8. Training Facilities

a. U.S. Training

From 1952 to 1967, a total of 104 participants were sent abroad for training, primarily to the U.S. Nine participants are schedule to depart in 1968. The deployment by years was as follows:

<u>Year</u>	<u>No. of Participants</u>	<u>Year</u>	<u>No. of Participants</u>	<u>Year</u>	<u>No. of Participants</u>
1951	1	1953	3	1955	5
1952	8	1954	2	1956	9

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<u>Year</u>	<u>No. of Participants</u>	<u>Year</u>	<u>No. of Participants</u>	<u>Year</u>	<u>No. of Participants</u>
1957	7	1961	1	1965	21
1958	2	1962	-	1966	10 <sup>0</sup>
1959	3	1963	7	1967	18
1960	-	1964	7	1968	9*

\*Scheduled

This training consisted of some 1,380 man-months of training time, with approximately 66% of total man-months of time occurring after 1962.

Of the approximately 80 participants who have returned from training since 1952, about 49 or 61 percent are still employed in the same agency from which they were sent, and 18 (23 percent) are employed in a different agency but the same general field of work. The balance (16 percent) are in different fields (some in very high position) or retired, dead, of whereabouts unknown.

Of the approximately 39 participants returned since 1962, 34 or 87 percent are employed in the same agency from which they were sent and 4 or 10 percent are now in a different agency but the same general field of work. Only one trainee (3% of total) is in different field of work.

Of the 18 major divisions and branches CSO is organized into, 16 are presently headed by statistical officers trained under the US AID program.

b. Education in Statistics

There have been substantial improvements in the availability of academic training in statistics principally as a result of AID participant training. Staff members of the University of Dacca, Punjab, Karachi and Peshawar have been sent to the U.S. for advanced degree training. When these participants return, they will contribute to improve training capability. The level of academic training is still low. The ISRT was strengthened through the services of a U.S. Advisor.

c. In-Service Training

Considerable technical assistance has been given in this area and training facilities in the CSO are fairly well developed. East Pakistan is carrying out training in data processing but West Pakistan has no in-service training program; nevertheless improved training procedures for inaugurating new surveys has recently been experienced.

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