

# COORDINATION OF STATISTICS

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**HEARINGS**  
BEFORE THE  
**SUBCOMMITTEE ON CENSUS AND POPULATION**  
OF THE  
**COMMITTEE ON**  
**POST OFFICE AND CIVIL SERVICE**  
**HOUSE OF REPRESENTATIVES**  
NINETY-FOURTH CONGRESS  
SECOND SESSION

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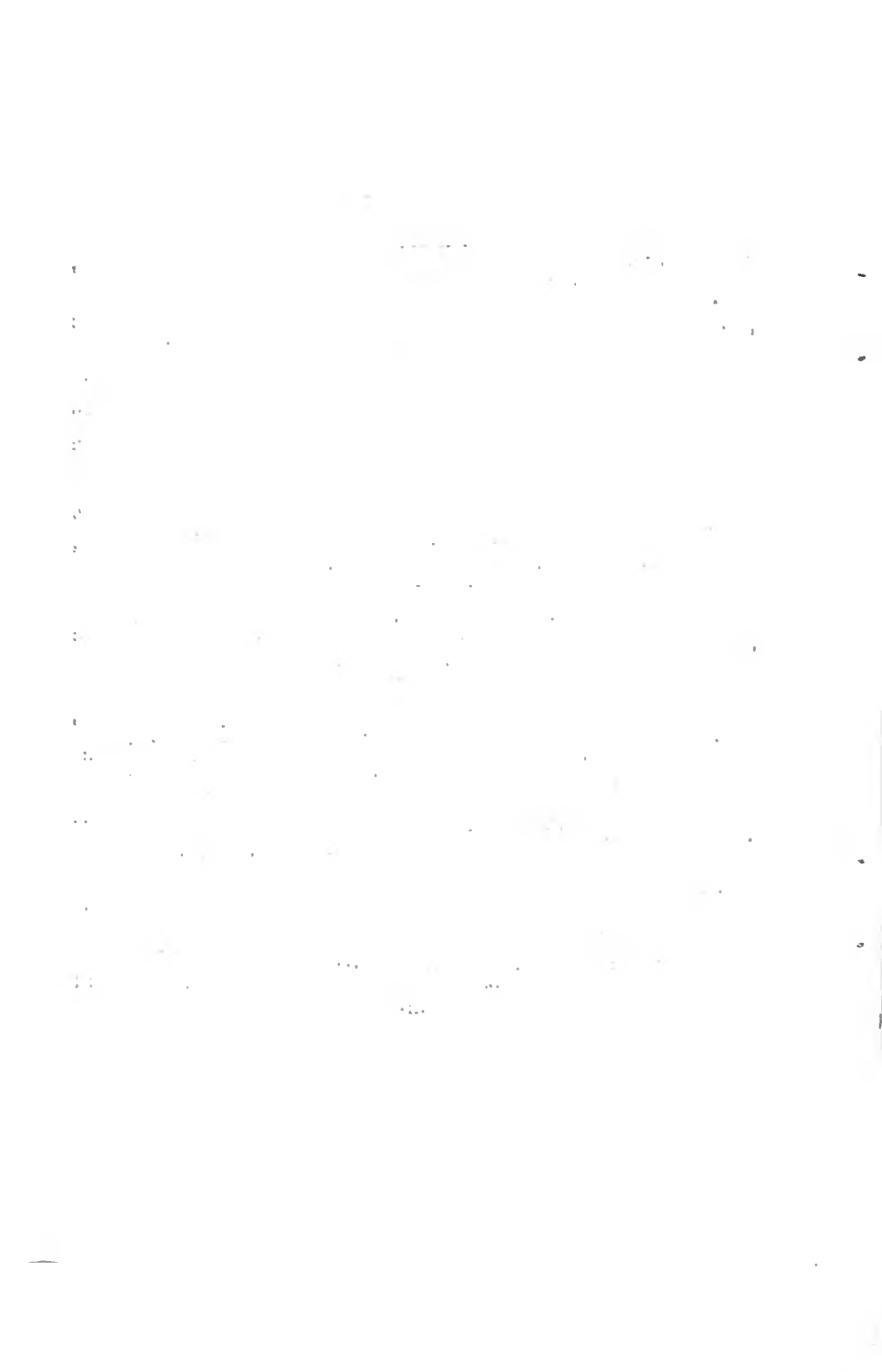
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# COORDINATION OF STATISTICS

TUESDAY, FEBRUARY 24, 1976

U.S. HOUSE OF REPRESENTATIVES,  
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,  
SUBCOMMITTEE ON CENSUS AND POPULATION,  
*Washington, D.C.*

The subcommittee met at 10 a.m. in room 304, Cannon House Office Building, Hon. Patricia Schroeder (chairwoman of the subcommittee) presiding.

Mrs. SCHROEDER. The meeting will come to order.

Information is the lifeblood of our society, the raw material of Government and industrial decisionmaking, academic analysis, and public comment. A growing part of the cost of government is concerned with acquiring and providing data to the various user publics. With finite human and monetary resources available to supply, process, and analyze the data, it is imperative that the data acquisition efforts of all government agencies, individually and collectively, be coordinated to the maximum extent possible so that those data that are acquired can be depended upon to provide the desired information for governmental and societal purposes.

Decisionmakers—those in power centers and those who vote—seek guidance on the basis and consequences of their actions. They are numerous and diverse in their interests, values, knowledge, and views. They need access to information which is structured in its acquisition and flexible in its access and interpretation. With information systems which are planned adequately, whose priorities are set properly, the array of options open to man should be broadened, and the likelihood of irrationality in decisionmaking reduced.

Information is a resource to be used—and the lack of a sense of usefulness can affect the total system, starting with a negative impact on the willingness of individuals to supply the initial raw data. Information is a heterogeneous resource, which, if the system is designed with sufficient flexibility, can be used continuously without diminution of its potential value for other users. Its value in use depends on its availability in the right form at the right time for the right receiver. Many data can be consumed by time, however, and thus the statistical managers must be alert to the needs to update and correct, replenish and replace. A commitment to such a “need to know” has to be active, rather than passive, for without proper commitment in terms of resource supply or access, in terms of advocacy and budgetary support, the generation and provision of information, statistics, and data in a meaningful form to decisionmakers is seriously hampered.

The design of the program of a statistical agency, or of any multi-purpose data system, should reflect two major concerns: first, an awareness of the explicit data requirements of the range of substantive uses that the produced data might reasonably be expected to serve. Since a statistical agency, or a program agency, has to operate within a limited budget, the data base will need to be restricted to a subset of expressed data needs. Second, the data system must be sufficiently flexible, sufficiently open, to permit it to adapt and respond to use requirements not yet specified. Societal needs, problems, and challenges are continually changing and evolving.

Both of these considerations indicate a need for mechanisms to effectively and efficiently structure any data program to respond in some optimal sense to the needs of its various user publics. It means that decisions must be made, and defended, to satisfy some, and deny other, information needs. There are limits to the amount of data that can be afforded, that can be measured or reported in reality, or that the responding public is willing and able to provide.

These hearings have been called by the Subcommittee on Census and Population under its oversight responsibility for the Federal statistical system to examine the need for increased coordination and planning of the data acquisition efforts of the Federal Government. It is hoped that the proceedings will furnish information and perspective on the following questions:

(1) Should there be a greater commitment of resources to planning and coordination activities by the Statistical Policy Division of the Office of Management and Budget, as well as within the various individual statistical agencies?

(2) Should there be mechanisms to control and coordinate the amount and nature of data acquired by the programs within the various departments of the executive branch? This is potentially the major area of abuse and irritation to the providers of data, and may derive from imprecise specification of reporting requirements and program objectives in the enabling legislation, which leads program managers to feel that they must attempt to acquire any conceivable bit of information that might in some sense ever be asked of them, with little consideration of actual use or meaning of the acquired data.

(3) Should the Congress be more explicit in the data requirements written into legislation in terms of mandated studies or reporting requirements—both as to the feasibility of acquiring meaningful data at a reasonable cost and as to the practicability of the respondent being able to measure or provide the data at all?

(4) Should there be structural changes in the Federal statistical system, possibly going to the extent of creation of a single general purpose statistical agency, with a data agency within each department to coordinate the program and administrative data requirements of the department?

The subcommittee will seek to determine the extent to which the demand for meaningful and responsive data is being planned for and is being met efficiently, and to examine alternatives in order to arrive at recommendations for the future improvement of our statistical system.

Our initial witness in these hearings will be James W. Knowles, former director of research of the Joint Economic Committee, who wrote his first staff memorandum on these issues some 24 years ago, and who had a major role in a similar set of hearings conducted by the JEC—on “The Coordination and Integration of Government Statistical Programs” nearly a decade ago.

Mr. Knowles, we are glad to have you appear before the subcommittee this morning, and you may begin in any manner you wish.

**STATEMENT OF JAMES W. KNOWLES, CONSULTANT, AND FORMER EXECUTIVE DIRECTOR AND DIRECTOR OF RESEARCH, JOINT ECONOMIC COMMITTEE, U.S. CONGRESS**

Mr. Knowles. I am most grateful to the subcommittee for its invitation to appear this morning as its hearings into the need for increased coordination and planning within the Federal statistical system begin. It is important that the Congress and the Nation recognize that we have outgrown the present decentralized, partly integrated programs for statistics. I became convinced of this during a professional life devoted largely to advising public and private policymakers on the basis largely of analyses of quantitative data, most of which came from the Federal statistical system. Even that furnished me from private sources—clients for example—derived its usefulness in part from the availability of related data from the public system. Another part of my professional career during 22½ years with the Joint Economic Committee was appraising the strengths and weaknesses of statistical programs and helping formulate plans for improvement.

It is particularly rewarding therefore to have this opportunity to put forward the conclusions of my career in statistics. To assist the subcommittee visualize how we might transform the present programs into the integrated and coordinated system we will need in the decades ahead, I shall organize my remarks under two heads: first, the criteria which should be followed in the design of a national statistical system; and second, some recommendations for steps to be taken now to put underway the needed transformation.

**CRITERIA FOR BUILDING A STATISTICAL DATA SYSTEM FOR A FREE SOCIETY**

The criteria now set forth for your consideration are designed to fit a free society in which power is highly decentralized and therefore there is ample safeguards around the rights of individuals. They fit into a society in which there are definite legal and political limits on the actions of both government and private organizations. You may feel that such an emphasis on a free society is a mere rhetorical flourish. Nothing could be further from the facts. If our statistical systems had to serve the needs of a highly centralized, administrative society, the design criteria would have to be quite different.

(1) The organization and operation of the statistical system must constantly reflect the highest ethical norms.

This may seem a mere repetition of trite hopes, frequently blasted in government affairs. On the other hand, the statistical system is particularly dependent on adherence to high ethical standards in both its

organization and its operation. Foremost among the requirements for a quality statistical system is public confidence in its ethical integrity. That confidence will not flourish unless the system enjoys the respect and confidence of professional workers actively using the data coming out of the system. The statistical system cannot be immune to the influence of widespread violations of ethics. Lying, doubletalk, bribery, public revelation of confidential records, violations of constitutional restraints on governmental actions—all these contribute to an atmosphere of distrust of government which sooner or later will tend to undermine people's trust and hence their willingness to respond quickly, accurately, and fully to government requests for information. They will tend to bias the public against trusting the truthfulness of government statements, including statistics.

So far we have been very fortunate in that statistical programs have been relatively free from the backlash of distrust and deteriorating confidence in public institutions developing in recent years. Although there have been a few undesirable events, statistics have fared quite well. This should not lull us into blindness to the obvious dangers. Remember what an outcry arose when there was only a small sign of possible political tamper with this system's integrity and objectivity!

We should also be alarmed over the long controversy over instituting a new program for reporting financial results of businesses by line of activity rather than by companywide or other organizational structure. I doubt that any statistician who studied the problem would be opposed to the principles underlying this proposed program. Yet opposition from business still delays implementation years after it should have been operational. Why? I am convinced that the answer is that the program has been put in the Federal Trade Commission, thus creating a potential conflict of interest between statistical obligations to respondents and the FTC's responsibilities as investigator, prosecutor, grand jury, judge and petit jury. Indeed it must be remembered that the Commission also makes some of the rules it seeks to enforce. Yet so far Government officials insist this sensitive program be located in the FTC in the face of daily headlines about widespread violations in government of ethical norms, much less legal statutes. Should we expect businessmen to trust the personnel of the FTC in such circumstances?

"Lead us not into temptation" says Holy Writ. Is this not also sound rule to follow in government statistical planning? Is there really any excuse for placing statistical programs in agencies with regulatory, prosecutorial or investigatory missions? So far scandal has not besmirched these programs but isn't it wise to remove all temptation before such an event rather than wait for the worst to befall these programs? After all, programs such as this one can be carried out just as economically and effectively in an independent agency as in a conflict of interest situation like the FTC.

(2) Perfect objectivity in measurement of social variables is probably unattainable but nevertheless it should always be our prime objective in designing and operating the nation's statistical system.

This is a mere repetition of the obvious yet it is easy to forget its perpetual significance. There is a tendency for he who plays the piper to call the tune. Political leaders and their supporters naturally tend



to view themselves as being in that position of calling the tune, especially when statistics may have political consequences. But all concerned should remember that in the end it is the public that pays the costs of this system and that their confidence in the system is what keeps it worth its costs. Thus it is essential that data be collected, processed and published in as bias free manner as human intelligence can assure—the process must not only try to be objective, it must look objective!

(3) Since statistical programs impose significant costs on both respondents and taxpayers, economic considerations require that they be designed so as to be useful in the future to help answer questions of administration and research not now formulated as well as the present questions that lead us to collect data.

It is well known that the design of statistical programs generally follows lines suggested by questions that arise in the administration of other programs, research or legislative investigations. For example, the present national income and product account seem to have arisen out of questions about incomes and their course during economic debates in Congress in the depression of the 1930's. Similarly price indexes were created to serve needs faced in war programs of control. What has not been so obvious is that economies can be achieved by designing programs so that the basic records of data collected can be preserved and used later to arrive at aggregates unthought of at the time of the original collection. Such data archives are expensive to create and maintain but often cheaper than repetitive field operations.

In addition, by careful design it is possible to create a variety of measures from the same basic field data, thus reducing burdens on respondents and costs to the government. To the extent that this kind of versatility can be built into the system it is desirable up to the point at which combined private and public costs for a new survey in the future will be less than the costs of building in the capacity to create many different but related measures. Taking maximum advantage of such opportunities will require more resources for statistical programs since government personnel will have to be used to create some measures for private use in order to protect confidentiality of records.

(4) Statistical data should be released in formats intelligible to the users and fully documented.

Statistical agencies have usually tried to provide adequate and intelligent explanations of data upon release. On the other hand limitations on budgets have a tendency to create choices between full editorial effort and funds for data collection, processing or improvement. In these circumstances resources at times have been unavailable for the kind of editorial or preparation efforts that would fully serve the needs of data users. It is so easy to slip into misuse of data without knowing it that no program of data collection should be in operation unless we are willing as a nation to spend the funds to make them fully understandable to users with all their qualifications and explanations. I might add that it is also true that Congress needs to know.

(5) Provision must be made in the system for a maximum of interchange of ideas between producers of data and users, both in and out of government.

A principal reason for the past practice of decentralizing data collection throughout government has been the obvious advantage of maximizing interchange of ideas between producers of the data and those users who sponsor its collection. Obviously, utility of data is maximized by relating detailed definitions, aggregating principles and formats to the uses to which the data will be put. Not so obvious to the non-technical person is that users find out aspects of data that may suggest errors or imperfections that the producers do not detect. Therefore, whatever organizational plans are approved in the future should make provision for this interchange between users and producers both in and out of government.

(6) Public statistical programs should take maximum advantage of private programs and every effort should be made to achieve a maximum of harmony of definitions and procedure.

It is widely known that government statistical programs have often made use of data prepared through private collection systems such as trade associations. What is not so well known is that many data systems in individual households or businesses do not have definitions, reporting periods or collection methods that harmonize with requirements of government statistical programs. Efforts to harmonize the different systems would pay dividends both in the public and private sectors. For one thing data would more closely correspond with requirements. Furthermore, costs of responding to data requests from government would be lower if all one had to do was to photocopy the appropriate record sheets.

(7) The accuracy of statistics should be improved to the point at which in each case the cost of additional accuracy exceeds the probable benefits.

Every user of measurements or data wishes them to be accurate. But how accurate and what is meant by accuracy in the particular case? This could be a long subject in itself but it is of such importance that I shall at least spell out two simple propositions: first, in all cases data should be accurate to the extent to which it can be improved without incurring costs exceeding the benefits from increased accuracy. The second proposition has been well expressed by Prof. Oskar Morgenstern in his book "On the Accuracy of Economic Observations," [2d edition, Princeton University Press 1963, p. 4].

The very notion of accuracy and the acceptability of a measurement, observation, description, count—whatever the concrete case might be—is inseparably tied to the use to which it is to be put. In other words, there is always a theory or model, however roughly formulated it may be, a purpose or use to which the statistic has to refer, in order to talk meaningfully about accuracy.

In view of the complexity of the problems encountered in defining accuracy for program purposes, much less measuring it, the success of the agencies in providing guidance about errors to users is remarkable. The subject, however, demands increased research efforts in the future if progress is to be made in the use of quantitative methods in social decisionmaking.

(8) Statistics should be consistent.

Most uses of statistics require the use of data referring to a number of different time periods for the same series or to related series for the time period or periods. For example a count of the unemployed for 1 month becomes meaningful only when compared to unemploy-

ment last month and in the same month of the previous year; or it may be given meaning by comparing it to the number of people seeking work plus those at work or the total work force. Again the study of productivity requires the study of the relationship between the output of goods and services and the input of productive resources—labor hours, capital stock, et cetera.

Clearly, for these relationships between different sets of data to be meaningful, the data must be consistent from time to time and series to series in definitions, methods of collection and aggregation, et cetera. It is unfortunate that dispersion of programs between agencies and limitations on budgets have operated at times to reduce the consistency of data below the standards statisticians know how to attain.

In passing it may be noted that the problems of consistency have adversely affected many studies in diverse fields. In economics for example, the Joint Economic Committee has had its staff under my direction prepare studies of the relationships among productivity, prices and incomes. This is a field of great import for both public and private policymaking, yet the results of the best scholars leave much to be desired, mainly because existing data are so lacking in consistency. Again in the field of education, many theories have been propounded concerning the poor learning records of students in a variety of schools. But, in general these studies concentrate on what happens within the school where educational measurements are taken. Only about a fourth of a child's life each day is spent in school. What happens the rest of the day? If studies could call easily on related data from other measurement programs in economics, welfare administration, taxation, et cetera to produce readily a complete picture of the child's environment, what would we learn about the educational process?

(9) Statistics, to be useful, should be timely.

If statistics are to be useful so as to justify the expenditures on their collection, then they must be available at the time appropriate to decisions. Suffice to say that in many cases two causes work to thwart agencies' good intentions toward timely release. First, private individuals and organizations may have little reason to prepare data as fast as government programs require. Second, processing facilities and approval machinery outside the control of the statistical agency itself may slow the process. Problems of users with the GPO delays are too well known to require explanation.

(10) Politics should not play a role in the selection or promotion of the personnel assigned to statistical agencies. In particular, high professional qualifications should be insisted upon for heads of statistical units.

(11) An independent channel should be provided through which professional and lay criticisms of statistical programs and suggestions for their improvement could be considered by the highest authorities in the system.

(12) Professional advisory committees are to be encouraged under guidelines to guarantee selection and rotation of members without regard for politics.

(13) Each statistical program should be subjected to periodic review by outside professional commissions or committees to assure that

they are kept in tune both with needs and advancing professional standards.

These four criteria are meant to insure that professional standards of the highest attainment characterize the Federal statistical system, and that there is strong and convincing evidence to the profession and the public that the system is free of political influence on the data released by the various offices.

(14) Statistical agencies should publish regularly along with their regular output reconciliations between related series put together on varying definitions.

This is now done in some cases as for example by the Bureau of Economic Analysis in the Department of Commerce which supplies a table reconciling the Bureau's estimates of profits in the national income accounts with those of internal revenue. Also, a reconciliation is provided for the budget in the national income account with that in the unified budget document. More of this could be done at a cost, as for example in employment data where information comes both from households and from business establishments.

(15) Definitions and classifications should be the same throughout the system.

This has been recommended before but though progress has been made, I have a firm belief that much more could be done. This is particularly important in the case of basic data from which more aggregated series are derived. Future requirements may be different and uniform, definitions and classifications, along with uniform procedures for identifying such data could make it easy and economical to rework basic data to produce new series as required.

(16) Collection of data from individual respondents, whether firms or individuals, should require the least possible number of forms and the least duplication among programs.

(17) Byproducts of administrative processes should be used wherever it is possible without bias, danger to rights of individuals, or serious delays or other impairment of the statistical system.

These two criteria are already an intimate part of our statistical programming and much progress has been made in putting them into practical effect. Whatever further progress can be made in these directions will be worthwhile.

(18) Service centers should be established in the District of Columbia and in other strategic cities around the country.

If the Nation is to obtain maximum value from its expenditures on statistical programs, then the output of the system must be made available economically and expeditiously to users both public and private throughout the country. This is not being accomplished systematically today. Service centers with adequate equipment and access to the other parts of the data system could expedite data availability in three ways at least. For users with computers, online procedures could be worked out to transmit data by wire to the user computer memory without the time loss created by present publishing processes. For users who do not know which agency has the data they require, such a central service agency could speed their way through the Government maze, a matter of considerable merit. Finally, in order to preserve the right of respondents to privacy, original data for individual respond-

ents cannot be revealed. On the other hand there should be no reason for the Government hesitating to do special processing of related basic reports for a user so long as the finished tabulations do not violate privacy rules. Agencies can do this at present but staff and other resources are heavily burdened with regular routine. An independent center whose only job was service would be in a better position and moreover some part of its budget would be covered by fees of users for certain of its services.

(19) As soon as data are released, they should be available to users as fast as human knowledge permits.

Data are often not available to users, particularly those outside the Washington area for days or even weeks because of printing and mail delivery problems outside agency control. This could be cured, perhaps in part through establishment of the service centers mentioned above. Complaints have brought little results to date, particularly from the GPO. It is time a strong effort was made to make our investment in statistical programs pay off to the maximum.

(20) Some of the costs of operating an improved statistical system will come from the budget because of the utility of data to the Government, but other costs, including some part of costs for service center work to make data available to nonprofit users could also be paid by Government rather than by fees.

If the Nation is serious about encouraging scientific progress and the development of innovations, especially in social policies, then the Government should stand ready to carry part of the costs of providing the statistical data that is the basis of much modern quantitative research. Research should not be confined to the wealthy by the high costs of data acquisition and processing.

#### RECOMMENDATIONS

If the present decentralized statistical organization of the Federal Government is reviewed in the light of the criteria I have so far spelled out, then I believe we can take some pride in this Nation's accomplishments. Data collection has been kept close to the user agencies, there have been high standards maintained in protecting confidential information, programs have shown improvement, and staff professional standards have usually been raised to high levels.

Nonetheless, serious questions can be raised about the integration and coordination of the system as a whole, and about the many temptations that now exist for unethical conduct. I would, therefore at this point make a number of recommendations. There are many specific matters in the dozens of reports of the Joint Economic Committee with which I in general concur. Since these are readily available I shall not repeat them here.

(1) Create a central statistical office at Cabinet rank.

Although the Office of Statistical Policy of OMB has had a good record as a coordinating body, events of recent years have convinced me that the statistical system needs a central office headed by a professional of cabinet rank, totally independent of politics, and guided by a commission of persons representative of all sectors of the national life. In theory this body might be placed in the Executive Office of the

President, as the present OSP is, but I am inclined to believe that to carry conviction that the new organization is nopolitical, it must be independent, probably in Commission form. In designing the specific features of such a central statistical body, Congress would be well advised to test proposed arrangements and rules against the 20 criteria I outlined earlier. At all cost, a body of ethical rules for the personnel of the statistical system ought to be part of the organic law setting up the new organization. Data collection activities now dispersed through the Government would be transferred to this new agency while analytical and policy advisory functions would remain in the separate departments and independent commissions as at present.

(2) Appropriations should be made to the central organization in the future.

However the Federal statistical system is organized in the future, funds to support data collection type activities should be made to a central office which would then apportion them among the separate parts of the overall effort, being therefore responsible for the efficiency and effectiveness with which funds are spent.

(3) The powers and responsibilities of the present OSP should be transferred to the new central statistical agency or commission.

The review and coordination powers and responsibilities of the OSP in the OMB should be transferred to the new statistical agency or commission recommended above. This would include power over form and surveys directed at the public by other agencies of the Government.

(4) All data collection programs should be transferred out of regulatory or law enforcement agencies except where it can be shown that this is impractical for purely technical reasons.

The only exception that I have been able to think of as a possibility is the income statistics program located in the Internal Revenue Service. It may be that it would be impractical to transfer this program but even this one should be examined carefully before a decision is made to exempt it from transfer.

(5) Immediate steps should be taken to speed data to users upon release, overcoming the lags prevailing at present.

(6) A system of service centers for statistics should be established as soon as possible to improve data availability to users.

These two recommendations are aimed at improving data use by speeding the distribution of data once the release is made in Washington and to improve the availability to users of needed explanations of technical aspects of data. In addition, the central data centers would make more data available because it could make special combinations and analyses of data which cannot ethically or legally be released to the public in raw form.

(7) Substantial resources should be made available to the proposed central statistical agency, or whatever coordinating body meets congressional approval, in order to fund research into statistical methods, common definitions and classifications, other steps to forward integration of various series of data, and means of minimizing burdens on respondents.

Some funds are now available in agency budgets for methods research, but it will require much more effort if the system is to be fully integrated.

(8) All positions in statistical system should be put into the career service and all political influence on appointments removed by law.

(9) A temporary study commission should be established to make a thorough study of personnel aspects of the statistical system including recruitment, training, compensation, and in-service training and retraining.

(10) Provision should be made for a committee of professional experts, with staff to study the problems of determining and controlling accuracy of statistics.

This effort would require a modest budget for a number of years, perhaps even a long span of years but if it built carefully on the work done so far in the existing agencies it would have a promise of contributing importantly to both professional and lay understanding of what can be truthfully said about the accuracy of social measurements.

(11) Control over such functions in statistical agencies as appointment of personnel, budget priorities, program planning, and publication should be vested in professional statistical personnel at appropriate levels in the new structure.

(12) More research effort should be devoted to relation of Government data inquiries to recordkeeping practices of individuals and organizations.

Many troublesome questions arise about data from the problems encountered by private individuals and organizations trying to supply data asked for by Government agencies according to definitions and classifications which do not agree with those commonly employed in the private sector.

(13) Strict provisions providing for the confidentiality of information supplied to Government agencies under statistical programs should be made law binding on all agencies and all Government personnel.

Such provisions exist for some agencies and some personnel, but they should be reviewed and made binding throughout Government in order to avoid any development that might shake public or professional confidence.

(14) Congress should make provision for within-house capability for a Joint House-Senate organization to: (a) conduct detailed continuous review of statistical programs; (b) provide regular review of statistical budgets; and (c) continuously review proposed and existing legislation to determine whether data requirements are practical, whether programs can be administered with the flow of data that is practical, and to call attention to cases where the legislation will create a demand for new data programs.

The dedicated efforts of highly qualified professional and interested Members of Congress and the public have created a statistical complex of great range and high quality. It will require outstanding, nonpartisan efforts to improve upon it within the near future but the results are worth the effort.

I would like to conclude with a little fact. The 1977 budget, in the statistical agency summary, in Special Analysis G, contains a statement that the Bureau of Labor Statistics is asking for funds to complete the current, underway survey of consumer incomes, expenditures, and savings, and to begin development work on a new quarterly survey to maintain a continuous flow of such information from here on out.

This is particularly interesting to me because the first study undertaken by direction of the Joint Economic Committee, upon its creation



under the Employment Act of 1946, is what is now in statistical circles a famous document, "Statistical Gaps" published in early 1948. And the first recommendation was that we do a benchmark study of consumer incomes, expenditures, and savings, and institute a quarterly survey to keep it up to date.

If the program goes forth, we will only have taken three decades. If you think that's bad, there exists a document of the 1920's describing a better business data system than we've got in 1976 or even proposed as yet.

Thank you.

Mrs. SCHROEDER. Thank you very much, and I appreciate your comments here.

I noticed throughout many of your recommendations you continuously mentioned getting politics out of statistics. Have you seen a lot of evidence of political interference in these statistics?

Mr. KNOWLES. Fortunately, this has been a minimum in our system. There have been two or three indications of appearance of threats of this. Whether they were or not, in fact, is hotly disputed in several circles including political circles. This happened when there were appointments to high office that were not very popular with statisticians.

I only say we're lucky. There's nothing in the present system to prevent, in statistical circles, the equivalent of what is happening, very unfortunately, in some other circles in recent years.

And my experience of 22½ years on Capitol Hill makes me feel that the time to take action on a problem when you find it is before somebody turns up with a crisis or scandal or something else, because then you have a double problem. You have to cure the problem. Then, you have to convince people that it is cured.

Right now the system retains a high public and official support. There are some places where there are justifiable quarrels with the system such as in the FTC.

Don't let us wait until somebody somewhere slips, because there's a big temptation out there.

Mrs. SCHROEDER. You also make many references about how statistical data should be in its most readable form, which is right. One of the problems I've seen is when you do that, don't you put a lot of companies out of business that have made it their business republishing statistics that are hard to interpret?

Mr. KNOWLES. Having been in the business, I appreciate the point you made, but really most of the money that business and other organizations pay to statisticians goes to management consultants and the like that use Government data in the process of helping the client and for analysis and interpretation. It is not paid to make the data available and to set it forth where the regular person can read it.

An example: The national income and production accounts are regularly reviewed. The latest revision was just released. It came in January with a very general four-or-five-page explanation of what was done. What was done is very particularly involved.

They have changed, for example, their handling of capital assets. As far as I am concerned, they have said a lot in that release, but just enough to whet my appetite.



When I look at the numbers in the published table, this is just the tip of the iceberg of a whole set of numbers I haven't received yet, and I won't get for a while. And the explanations won't be available until summer.

This isn't because of this organization for it is one of the best statistical agencies in the system. It's just that you provide funds, and the funds are spent first and for the most part on the data problems; and you end up with this problem, that there are lags. In this case it will merely be a lag. In some cases, there do not exist published up-to-date explanations. And if you are canny and have anything more than an ordinary problem, you will call the agency and find out who is the expert and go talk to him. You won't stop at that data, because it won't be sufficient.

I think that this means that a lot of users are either misusing statistics without meaning to, or they're not using the data because they don't know which ones to use or where to find what they want. And the data is probably there. It's amazing the amount of data we have in this Government.

And, again, it just adds to the cost. And most users are not well healed like General Motors or somebody like this who can send somebody down and run the data down. It may turn out to be epicmaking. He may not be able to do it because he may not be able to find out where the information is.

Mrs. SCHROEDER. I take it the Government Printing Office is not your favorite.

Mr. KNOWLES. As an employee of Congress it was one of my favorites. I could hand in a complete one-inch-thick committee report and get it back the next day. It's a marvelous service, and for us up here on the Hill it is a remarkably efficient organization. But so far as the GPO being employees of the Congress, they take care of us first, and there are times when weeks and months can go by before some copies of executive branch reports are available. Even for committee reports, you may find the copies made available through GPO are made later than the first committee copies.

Mrs. SCHROEDER. Congressman Simon, do you have any questions?

Mr. SIMON. If I understand what you are suggesting, it is that there be a statistical center where, for example, you are talking about a Consumer Price Index and all those things would go into this one center.

Now, I had some experience in State government before coming to Congress; and there, it seemed to me, in the State of Illinois, we should have been pulling all our computers together. The argument used by the various agencies there would be used by the various agencies here, that it is not the computers and, you know, the data gathering, but the programing that goes into it. That is the key to these departments, and they each want to have their own domain.

What is your answer to this person from the Department of Agriculture or HEW each of whom say, "We want to run this and see what comes in and comes out; and we want to run our own operations?"

Mr. KNOWLES. They're wrong. It's that simple. The problem is nationwide not departmentwide.

And the bureaucracy of the department has a right of analysis and policy analysis and the analysis of problems which are quite rightly in the department. They have a right to demand that the Government collection machinery produce the data they need to operate. If they need a certain type of data, they have a right to specify, "We need this type of data."

But as far as a selection and programing of the computers and the making available of this data, I see no reason to spend millions to give HEW a whole stack of data and have it filed away in files not used by HEW, much less humanity.

Mr. SIMON. Do you have any idea of what kind of money we could save if we moved in this direction?

Mr. KNOWLES. If you look in the statistical programing end of it you will find at the present time we collect income data about the income of the population for the individual in the Internal Revenue Service tax purposes, and a branch of HEW for purposes of analysis of welfare programs. Certainly, they are asking for a million, million and a half, for a program this year. There's a program in the Department of Agriculture that we collected part of the data and another in the Bureau of Labor Statistics.

I would guess at the present time in addition to the Bureau of Economic Analysis in the Department of Commerce which puts it together, and the Census Bureau which also makes a collection of data on this subject periodically, there may be a half dozen or dozen agencies. So you must have data collected by between 80 and 90 percent of the Government, possibly. What in the world are we doing?

How many different times do the same people fill out a form with the same information on it. With a computer this is stopped. They don't have to have the individual data except in a case like IRS.

There is no mechanical reason why all of this can't be done in one fell swoop. There are technically no problems in doing this in the first round. We have known how to do this for a good many years.

Mr. SIMON. You used the phrase "unethical conduct" and you used the adverb "ethically" about six times. Is there unethical use of statistics today?

Mr. KNOWLES. Whether there's unethical use is a good question. The problem is whether or not there is a temptation in existence at the present time that could lead to such conduct. And I believe there is.

I've cited one obvious example and there are some others. I do not believe that this is a healthy situation. We're lucky that there have been no egregious cases as far as I know. There has not been a proven case.

The reason for this is that a couple of places that are most temptable already have locks on by law—the doors are locked by law. There are other places where the door is not so securely locked. Think of an adversary agency like the FTC. Here's a guy over here collecting data, and here's a guy investigating about company X and Y and Z.

Now the data comes in about this company and the statistician and the investigator report to the same boss. I suggest that statisticians are highly ethical in such matters, and I don't know of any places where people have misbehaved. Yet, I don't believe that's a good way to run an agency.

It might be dependent upon somebody who's prosecuting somebody who's supplying the information to him.

In recent years we have been shown that where you create a potential evil, you will get it. You would never have imagined that some of the things that have happened in the last few years would happen, but they did.

Pardon me if I don't want to have one of those little episodes in the wrong place. A few years ago there was a well-intentioned but mistaken suggestion that a certain budget be cut back. It did look to any outsiders that spending \$1 or \$2 million on this program was quite a sum of money.

It happens that this agency was running right up to the edge of what they could feasibly operate. If you cut back, it stopped it dead. It stopped functioning. This was \$1 or \$2 million a year, and the startup cost of that would have been \$20 or \$30 million and 10 years of effort. You don't interfere with an operation of that sort.

And if we got some kind of a blowup that damaged one of these programs, you might find yourselves spending a lot of money over many years. As an old Capitol Hill employee, I believe in locking the door first.

Mr. SIMON. I can't disagree with that.

Mrs. SCHROEDER. Mr. Roussetot?

Mr. ROUSSELOT. Madame Chairperson, Mr. Knowles, we appreciate your bringing these to us. I apologize for not being here for your testimony. And it is good that you at least challenged us to look at this.

In the recommendations that you have made, here, do they coincide with some of the recommendations made by the Presidential Commission on Federal Statistics which conducted a very extensive study on Federal statistics and data gathering? Did you have a chance to look at those recommendations?

Mr. KNOWLES. Yes.

Mr. ROUSSELOT. Are they similar?

Mr. KNOWLES. There are some of these recommendations that would correspond to theirs. Theirs was less extensive, less sweeping.

I might also say some of these recommendations grow out of the many reviews of statistical programs of the Joint Economic Committee. So I've been studying these systems for many years. That's one of the sources, that Commission and several other commissions that investigated, particularly programs such as the unemployment-employment data, that influenced my conclusions and how I've framed them. But I took them all under consideration.

Mr. ROUSSELOT. Well, I know that when that particular report was published, I studied it thoroughly, because I was on this subcommittee at that time. Did they recommend a Cabinet rank?

Mr. KNOWLES. No.

Mr. ROUSSELOT. I did not think they did.

Mr. KNOWLES. As a matter of fact, I appeared on a program in which a number of us professionals evaluated that report. I don't think I can quote my remark quite word for word, but it went virtually something like this: I viewed the appointment of the Commission and its beginning to function with great hope and expectation and viewed its report with great disappointment because the President gave them

one particular injunction which I thought was very important; that was to study the organization.

They just skipped over and ignored the really major problem, and that I found very regrettable because I thought it was very important. I thought the President was right to ask the question, and I thought the Commission, many of my friends were on it, did not do what I would have hoped to see done.

Mr. ROUSSELOT. In the recommendations?

Mr. KNOWLES. In fact, they didn't devote a lot of study to the area.

Mr. ROUSSELOT. As you know, in many of the commissions, the individuals are very fine people, but usually the staff does most of the work, and consequently you don't always get a total input by individuals because they're busy in their other activities.

Mr. KNOWLES. That's right.

Mr. ROUSSELOT. Do you recall when Mr. Ash did the executive reorganization? Didn't he speak to this issue?

Mr. KNOWLES. Yes.

Mr. ROUSSELOT. And what was his suggestion as relates to statistical gathering and so forth? As I recall, he had something in OMB that would be enlarged.

Mr. KNOWLES. As I recall there was some enlargement of the thing, but it was kept within OMB, as I recall. But I wouldn't want to assert that for positive fact, because it was several years ago.

Mr. ROUSSELOT. That executive reorganization plan, as submitted by President Nixon, was done by a task force headed by Ash. And my recollection is that they did dig into this subject that you've covered or statistical gathering.

I'm not much of one to keep establishing new Cabinet-rank positions because we tend to create new bureaucratic monsters that go with it.

Mr. KNOWLES. How true.

Mr. ROUSSELOT. Do you think that we could do this within the framework of OMB, given the strength to make it move?

Mr. KNOWLES. Well, I have always, up until a few years ago, thought that the present system of having it in OMB was the correct judgment, but I've grown of the opinion that you are going to have to have some independent access to the public in order to build your own support for this program. And second, I have noticed a tendency for other matters to crowd this out of importance and reduce its standing.

If you look at what happened at OMB, the statistical office was once important. The head of this office was an Assistant Director. Now he's called Chief Statistician, and three layers down.

My feeling, for what it's worth, is simply that nice as it is to have it in the Budget bureau, and there are some obvious advantages that I would acknowledge, I'm inclined to think the subject is too important not to be given some independent standing of its own. And the reason to give it that phrase, "Cabinet rank" is not that I want this man to be a Cabinet politician all his life. I'm trying for this gentleman to have access to the public and to the President in his own right. This is a right of access to the leaders rather than through intermediators.

I think this is so important that we all know we have the best facts we can get, and they're adequate to our purpose whether on Capitol

Hill, down in the executive branch, or out in the public. We ought to make every effort, whatever it takes.

Mr. ROUSSELOT. Do you think we should consider establishing in Congress, perhaps within the framework of the Library of Congress, a data-gathering office; a similar-type central statistic office like we have the General Accounting Office. Maybe have a statistical office, an independent agency established by Congress under congressional control?

Let me interject why. We get so many complaints that we don't have total access to all the information we need and that we're lacking many times because we're dependent on input we get from the executive branch.

Maybe on this statistical situation we should make it a branch or division of Congress.

Mr. KNOWLES. I am inclined to think that Congress would find it profitable to found a Joint House-Senate organization whether you located it in the Library of Congress—they are already in the information business—or whether you put it over here in the Congress, itself, directly or whether you create, as we have done in other cases, a technical agency like the Joint Commission on Internal Revenue Taxation. I think almost anyone of these would work.

Mr. ROUSSELOT. Would you oppose the Congress setting up such an agency?

Mr. KNOWLES. I would advocate it. Some of the Federal machinery would oppose it, but the responsibility has been dispersed, and I think there would be some advantages in a central congressional agency.

Mr. ROUSSELOT. There is another area I don't think you discussed. We have a tremendous debate in this Congress about the troubles of unemployment. I believe many States have established job-data banks. Should we do this in coordination with the State governments?

Mr. KNOWLES. As far as I am aware, and I hope my information is still current, still correct, there are arrangements in the Department of Labor, now, for operating what in effect is a job-bank system through the public employment service.

Mr. ROUSSELOT. Right.

Mr. KNOWLES. And this system in effect coordinates the systems of the various States and provides an interstate linking process.

Mr. ROUSSELOT. How many States have job banks; do you know?

Mr. KNOWLES. I was under the impression—but don't hold me to this as a fact; I haven't checked on this since we held meetings—it was my understanding that it was extended to all 50 States.

Mr. ROUSSELOT. Well, I've seen several advertisements on television where they talk about the one in Vermont or New Hampshire.

Mr. KNOWLES. It was my understanding that it would be operated in all 50 States and operated through the Department of Labor Employment Service.

Mr. ROUSSELOT. Do they maintain a job-data bank themselves?

Mr. KNOWLES. It was designed through the Federal Government. The system was set up here.

Mr. ROUSSELOT. Do you think that this would be helpful or just another computerized system of information data bank that would not be used?

Mr. KNOWLES. Well, I think it could be a very valuable instrument. Whether it would work out or not, I haven't investigated in the past number of years, but the theoretical model that was in view was an admirable one. But there are some problems in making any such scheme work, and whether or not those were properly overcome, I don't know.

Obviously it is highly desirable if you can overcome these problems. They're mere technical problems that technicians could overcome.

Mr. ROUSSELOT. Would you be kind enough to go back and look at the "Federal Statistics and Presidential Commission's Report" and give us some kind of simple followup as to where you think they were on target and where they lacked proper consideration on the basis of your report here, today?

Thank you.

Mrs. SCHROEDER. Thank you. We appreciate your coming, Mr. Knowles.

[The additional material which was presented by Mr. Knowles follows:]

#### STATISTICS IN THE PUBLIC INTEREST

(By James Knowles, formerly Director of Research, Joint Economic Committee U.S. Congress)

The appointment of the Commission on Federal Statistics by the President in August 1970 was greeted with great enthusiasm and anticipation. For years producers and users of the data from the government agencies had been seeking improvements in Federal statistics with uneven success. Indeed many were growing discouraged. Gaps in data, issues over publicity methods, funding problems, questions as to political versus professional roles in program operation, and organizational issues had grown to impressive proportions. Though important contributions had been made by committees of Congress, especially the Joint Economic Committee, matters were still unsatisfactory. We looked forward, therefore, to the Commission producing a new charter for Federal statistics—new and definitive guidance from an impartial outside body of experts.

When the Report of the Commission came a year later in September of 1971, its contents were reviewed with eager interest. I was most grievously disappointed. In view of the President's instructions to the Commission, I had anticipated that the Report would deal with the very difficult and troublesome problems of structure and organization of the federal programs, with the issues relating to making these into a true statistical system. Instead, the report repeated some familiar clichés about decentralization, the problem orientation of data collection, and the importance of quality improvement, and then recommended a couple of new advisory bodies and a new program of statistical audits. Advisory bodies, and audits have had extensive trial in the Federal government. The results have been disappointing, to put the matter kindly. Can anyone read the records of the investigations of the defense programs in recent years by the Joint Economic Committee and still have great confidence in the efficacy of audits or of advisory bodies?

Failure to deal realistically with the problems of structure and organization of the statistical system, if we can speak of this as a system, is a major flaw in the Commission's Report. There are at least two important reasons for this judgment. First, at the present time there is a divorce of authority from responsibility. This means that no one can be held accountable for the performance of the system as a whole. Second, there is no way to insist effectively upon integration of the various series into a coherent body of truly consistent and usable data. It is incredible that in this day of advanced statistical knowledge, the different parts of the Federal system do not use definitions and procedures in common so as to achieve integration. Adequate techniques to deal with these problems of integration were probably developed as early as the 1920's, yet they are not yet common practice, nor did the commission recommend any steps that would produce the needed results. They left us with all the faults of the old disorganized structure.

Perhaps the source of the Commission's failure to deal realistically with the problems of structure and organization can be found in their belief that objectives or goals of government programs cannot be specified. The Executive Director of the Commission, Daniel B. Rathbun, states just this in his article in the February 1972 issue of the *American Statistician* and then goes on to say: "The inability to specify the question to be answered, i.e., to specify the goals of a program, arises of course from the fact that the issues about what the government should be seeking to do are basically ideological, not factual."

Ideology is all too often a cover for cowardice, malfeasance, power madness, or ignorance. In my own extensive experience in public and private policy making, ideology is most usually a cover for or results from simple ignorance. It is not ideology that explains attitudes about fiscal policies, monetary policies, inflation, employment, or welfare. It is ignorance of facts and relationships. Would any advocate of democracy tolerate, much less advocate, inflation if he knew that it was inconsistent with the decentralized power and individual rights that are the heart of democracy as an ideology? I am sure the answer is an emphatic NO! It is in facts and their logical analysis that the shortcomings lie, not in the difficulty of specifying goals. No decision maker can specify a goal about full employment no matter what his ideology, if he knows little or nothing about employment, labor force participation, productivity, changes in cost structures, and the relationship of cost-price changes to employment-labor force relationships. In lack of knowledge of facts, the decision maker can only make meaningless speeches about ideology.

But it is not only progress toward goals of government programs that needs to be measured. Administrators, Congress, and the public need detailed measurements of what government agencies are doing. What are funds spent on or for? Who receives the money? How is their financial status changed? What prices were paid? At present remarkably little data on these and related matters are available. For example, according to the national income accounts the Federal Government is spending at a rate of over \$250 billions per year and State and local governments another \$160 billions or so. Yet little is known about the prices paid under these programs, or who receives the money flowing from government tills. Is there no case to be made for gaps in our statistical knowledge when we do not know even what the government itself is doing, much less ought to be trying to do?

The significant issues about structure and organization of the Federal statistical system revolve around how to obtain integration of the parts of the system, how to facilitate and promote interaction between analysts and the statisticians who produce or process data, and how to set rules to govern the interplay between politician on the one hand and the producers and analysts of data on the other. The Commission offers only more of the same lack of organization and rules that led to the present unplanned and unrelated data gathering and use that fails policy makers time and time again. It is now time for a change but how to arrange those changes is as much of a mystery as before the Commission began its deliberations.

This shortcoming of the Report shows up in other matters. What is to be done about the practical political problems of building up the needed support for statistical programing both as to funds and as to authority to collect relevant data in ways that maximize their usefulness? What is to be done about the public relations aspects of statistical programs—including the holding of press conferences? What rules should govern the relative roles of political and professional responsibility in the operation of statistical programs? Who will provide needed leadership in this field and how? How will the interest and services of Congress be mobilized towards the improvement of the system? Can we evade the funding problem with beautiful sentiments about sampling and other errors, the problem solving orientation of data collection, or the need to eliminate unspecified data programs that are presumed to have outlived their usefulness?

These are not idle questions. For example, maximum publicity has been accorded each month to the series on unemployment and prices. This is not a new practice but has gone on for over two decades. Isn't this a questionable situation in view of the danger that these series will lead to incorrect decisions on public policies if over emphasized? These series exhibit lags of variable character and other characteristics of these data make them poor guides to current policy. Indeed it probably is correct to say that if policy decisions rest upon these data alone, policy would be wrong about 90-100% of the time. These data tell you what you should have done some months or quarters ago—or in some cases what you



should have done a year or more in the past. How can attention be directed towards data more significant for current policy decisions? How can the inadequacy of existing data be made plain to all—public, Congress and Administrators alike?

Even in the area of technical matters on which the Commission did undertake to make recommendations, I have some reservations. Can we expect agencies to specify sampling and other sources of error and measure their relative importance to a degree of reliability that permits publication of the results? Where a sample is intended to give estimates of the population, it appears that the necessary knowledge is available. What about other cases? The CPS not only estimates population variables, it also provides estimates of important relationships between individuals and groups, and between activities, as well as estimates of changes in activities. What is the universe that the statistician is sampling? Can best estimates of sampling error be specified for this sample that are usable for all purpose? This is the best developed sample in government today as the Commission would probably agree. Nevertheless, can we unequivocally state the sampling error, much less the total measurement error?

Similarly the Commission recommended that there be developed programs and techniques for using bank deposit data and document sampling in manufacturing. I am all in favor of new techniques, but both of these suggestions run into all the present problems and then some—timing of entries versus timing required for statistical use, accuracy of entries, identification of product and industry class to which the entry is best suited, and a host of others. I suspect that neither of these two will withstand detailed research tests. Nor is my hunch mere uninformed guess. I have worked with such records and remain suspicious of their utility.

Nowhere in the Report of the Commission do I find anything dealing with the important problems of conflict of interest in statistical programing. This issue has become more important as the collection of data by enforcement and regulatory agencies has increased. For example, the most important sample of financial records of business on a current basis is the quarterly financial reporting system of the Federal Trade Commission. Is the collection of confidential and accurate data on business finance properly placed in an agency which is also charged with investigating, rule making, trial, and enforcement functions? Nor is this the only example. Do we have in the statistical field the same problems of conflict of interest that prevail elsewhere? I believe that we do and that the subject should not be swept under the rug on any grounds. It is time that every statistical program was above suspicion even if this means taking some programs out of agencies that have traditionally operated them.

In speaking of Federal statistical programs before the May 1972 meeting of the Federal Statistics Users' Conference, I said:

"But, after all of these years of experience, I have an uneasy feeling that all is not well. Indeed, I confess that my experience is that there is too much heated emotionalism, bad data, and improper use of data to make one comfortable about the correctness of our decisionmaking—public or private. One might even speculate that some future historian of this period might borrow a phrase from William Jennings Bryan to accuse the public and private leaders of this era of having crucified mankind on a cross of ignorance."

A restudy of the Report of the Commission on Federal Statistics for this panel discussion only adds to my fears for now it seems that the best of our professional fact gatherers are content to leave humanity in much the same state of ignorance that I earlier regretted. Are we never to recognize that no value judgment, no ideology can be used in decision making until there is knowledge of ongoing events. Have 20 centuries or more of ideological failure taught the human race nothing about the use of fact gathering as a guide to the successful application of value standards?

Mrs. SCHROEDER. Ms. Pammela Grimm is the next witness. Welcome to the subcommittee hearing.

**STATEMENT OF PAMMELA R. GRIMM, RESEARCH DIRECTOR, EAST TENNESSEE DEVELOPMENT DISTRICT, KNOXVILLE, TENN.**

Ms. GRIMM. Thank you. I'm very pleased to be invited to be here this morning.



There are three major points I wish to make this morning about the Federal statistical establishment and the Federal bureaucracy in general.

First, and probably most important, there is a consistent discrimination against rural local governments in the collection, tabulation, dissemination, and utilization of statistical data by Federal agencies.

Second, the nonstatistical Federal agencies represent a far greater problem in data collection than do the major statistical agencies.

Third, the need for coordination and consistency within the major statistical agencies is every bit as great as the need for coordination among these agencies.

I need to tell you just a little about development districts in general and the East Tennessee Development District in particular so that you will understand my needs for data and my concern about its lack of availability in rural areas.

Development districts vary widely from place to place, but nationwide they have some similarities. They are voluntary associations of local governments, cities and counties. They were, in general, formed in recognition that many of the problems facing modern government do not conveniently stop at local government boundaries. Development districts, councils of government, and other regional groups were formed to provide the mechanisms to deal with these overlapping problems. Once formed, these regional groups proceeded to develop individual personalities which reflected the needs and concerns of the local governments in that region, so that even my development district in east Tennessee varies substantially from other development districts in other parts of Tennessee.

The East Tennessee Development District organization is nearly 10 years old. Staff has been present for almost 9 years. The district covers 16 counties and 46 municipalities in Appalachian Tennessee. We have a current population of about three-quarters of a million people. We have one large city of about 200,000 people, but 27 of our cities have populations of under 2,500. So we have both urban and extremely rural problems to deal with in our region.

Our program is broad. We have staff covering physical planning areas such as land use, water, waste water, solid waste, recreation, and transportation; human resources planning such as social services, aging, child development, housing, and health; public safety such as law enforcement, highway safety, and fire protection; and a miscellaneous group of people covering A-95 review, economic development, tourism and crafts, government liaison, and research. That last category includes me as a research director of the district. I have been with the district for 7 years and have witnessed most of its growth from a small, limited program to its present, broad program.

Initially we did planning and very little else. While planning is still a major part of our program we have become more and more involved in what we call technical assistance which generally means helping our member governments with applications for Federal or State funds, explaining new regulations and guidelines, and helping them through a maze of redtape. Since a development district staff member is generally the one to explain the Federal regulations to local governments, we are often the ones blamed for them. This has served to make us the men in the middle, caught between the local governments which orga-

nized ETDD to serve them and the State and Federal governments which provide a high proportion of our funding. Being in the middle is often uncomfortable, but it does provide for an interesting and perhaps unique view of how government works at all levels.

Because we have such a broad program, we work with a large number of Federal agencies and so we are more aware of the need for coordination among these agencies than many single-purpose groups may be.

As research director for the district I am at times a collector of data, a provider of data, a tabulator of data, and, most often, I am a disseminator and user of data. To my way of thinking, data has no reason for existence unless it is useful, and to be used it must be readily available.

From my position with the development district it is quite obvious that the Federal Government has been practicing a consistent discrimination against rural local governments.

I would prefer to believe that it is an unintentional discrimination, but unintentional or not it is very real and very harmful. Allow me to cite several examples of such discrimination.

When the "General Population Characteristics for Tennessee" was published by the census, it cost \$1.25 to purchase. It contained no data for cities under 1,000. It contained 16 data items for cities between 1,000 and 2,500. It contained 555 data items for cities of 50,000 or more. I have one such city.

When the "General Social and Economic Characteristics for Tennessee" was published, it cost \$2.25. It contained no data on cities under 2,500. It contained 1,674 data items for cities of over 50,000.

So for \$3.50 our large cities can buy over 2,200 items of information on their population. That is a cost of under two-tenths of one cent per item. The cheapest rate I could find for data printed from the Census computer tapes was three-tenths of 1 cent per item, and that did not cover the total cost. The group providing the data lost money on the job. The tapes, by the way, don't contain any of the means or medians calculated in the published data and which are in such tremendous demand on funding applications.

Even using the computer tapes, there is not the same amount of data for cities under 2,500 as there is for larger cities, and I have only 1 city of over 50,000, but I have 27 cities of less than 2,500.

Federal funding programs are placing an increasing importance on Census data in applications for funds. Funding agencies do not allow for the fact that Huntsville, Tenn., a town of some 400, does not have the same Census data readily available as does Knoxville, Tenn., a city of nearly 200,000. Yet Huntsville is every bit as concerned about improving its small community as Knoxville is concerned about improving its larger community.

Both communities pay Federal taxes. The Census collected the basic data in both communities. How can the Census justify telling Huntsville that they must pay more than Knoxville for the same data?

I'd like to interject here, that I recognize the argument that in many cases it is sample data and these towns are too small for sample data. However the Census is not consistent and publishes this data for CCDs or under 2,500.

By providing a larger published data base for Knoxville than for Huntsville the census is in effect giving Knoxville a far better chance to obtain Federal funds. I think that Huntsville and my 26 other small cities deserve at least an equal chance to obtain those funds.

A few years ago I wanted to obtain a special Census tabulation for 109 census county divisions from my area on income by age of head of household and by size of household. The cost estimate that I was quoted was just under \$3,000. In an average year I have less than \$500 to buy data, publications, and periodicals to serve the district's entire program. I might have been able to get a few hundred dollars more for a special table, but \$3,000 was impossible. Yet that tabulation could have had a major impact on our planning for the elderly, child development, housing, and general social services.

In a very real sense, the high cost of data discriminates against the small, rural governments which do not have much money and against the regional agencies that serve those governments.

The tabulation of data for publication is one of the major problem points for data users. Decisions are often made well in advance of collection as to how the data will be tabulated for publication. The decisions are made based on known needs at that time. But the needs change and local planning uses seemed to be unknown or, worse, ignored.

There is discrimination in the collection of data also which leads to a discrimination in the use of data. Many of the forms used to collect data are designed assuming that a large, paid staff exists to fill them out from existing records. But in rural areas large, paid staffs do not exist. So either the forms are not filled out or the numbers to fill in the blanks are someone's guesses.

Law enforcement planning provides an excellent example of how data can be used to discriminate against rural governments. Annually, we go out and collect crime data from our police and sheriff's departments in the area. In the larger cities we find good crime records. In many rural areas the only record is the sheriff's memory. He may or may not remember all the murders committed last year. He certainly doesn't remember all the burglaries and so forth. Yet 2 years ago it was decided that the concentration of crime was in urban areas and they should get extra money to combat it. The concentration is of reported crime. Slowly we are getting good recordkeeping systems into our rural areas. In Roane County a new record system went in and the rate of crime against persons jumped over 400 percent that year. There was no crime wave in Roane County, we just had accurate documentation for a change.

In many cases by the time the data reaches policymakers in Washington it has been through a truly remarkable purifying process that tends to give the data a degree of reliability far above what it deserves. Funding decisions are based on that data with no basic understanding on the part of decisionmakers as to the real reliability of the "facts" they have before them.

Revenue sharing and Federal manpower programs suffer from similar problems. Both the Census and the Bureau of Labor statistics will admit, at least privately, that their population, income, and unemployment estimates are far more accurate in urban areas than in rural

areas. Yet millions of dollars are allocated based on estimates which did not do a good job in our rural areas.

The indecision involved in the operation of Federal funding programs also works against rural areas. HUD's community development program is a timely example. Preapplications for funding were due February 14. When I left my office yesterday we still had not received the final guidelines and data requirements. The draft guidelines for the program indicate substantial changes in data requirements between the 1975 applications and the 1976 applications. I will have more to say about HUD and other agencies when I deal with the data problems caused by nonstatistical agencies.

But the point I wish to make here is that the constant change, and the last-minute decision on the part of funding agencies places a tremendous pressure on the development district staff. I am the major source of data for funding applications in our area. These last minute rushes mean that I cannot possibly give each application the attention it deserves. I provide the data I can obtain in the least amount of time and often the least time still involves several hours of work for each application. The larger cities have staff that can spend their full time on one application and they also have more data readily available. So the large city applications frequently are submitted with better documentation than those from small towns.

Rural government is frequently criticized for being poor government. I have worked with rural areas for 7 years. I think they do a good job, and they work under tremendous handicaps. When they have good data, they use it. Last year Tazewell, a town of some 2,000, did a special local survey to collect data that could be used for a housing program. It cost them \$700 to collect the data, and I tabulated it for them as part of my job. The city council members learned a lot about their community from that survey, and they have used the data to help improve their community. Given a chance, small government can do a good job. I think it is time the Federal bureaucracy gave rural government an even chance.

One way to give rural government an even chance is to give them the same data; another way is to somehow deal with the massive confusion created by Federal agencies.

The nonstatistical Federal agencies create a much greater statistical problem at the local and development district level than do any of the major statistical agencies.

At a recent East Tennessee Development District Board of Directors workshop I told the board members that I would be here today and asked if there was any message I could convey to you for them. The message was "stop."

Small, local governments cannot contend with the steady flow of paperwork sent to them by Federal agencies. Most of the forms simply end up in the trash unless they concern revenue sharing money. Vincent Barabba, I discovered, was an extremely unpopular man at that meeting because of the census of government forms had recently arrived. Yet Mr. Barabba and other major statistical agencies account for only a small portion of the forms received by local governments. The most massive annual collection of data in this country is not by any major statistical agency but by the multitude of nonstatistical Federal agencies for funding purposes, for research

projects, and for administrative purposes. This major collection effort has a tremendous and detrimental impact upon the far more cohesive efforts of the statistical agencies.

I said I would return to HUD's community development program. Part of the final application for community development funding is a series of tables for the housing assistance plan. Included in the plan is a little horror called table II. I have attached a copy of the draft table to my written testimony. I have also attached a copy of pages 11 and 12 of the draft guidelines which give suggested sources for data. Neither the published census data nor the summary tapes contain the majority of the data items. R. L. Polk data is available for only 1 of my 46 cities, and none of my 16 counties.

I might add here that although this data is supposed to be optional, HUD is not treating it as optional. We have to come up with it.

Mr. ROUSSELOT. You mean they're mandating it?

Ms. GRIMM. They are requiring it.

How are the tables completed? Well, for a small town it takes about 4 hours, tables from three different Summary Counts of the census and an active imagination. The larger the area, the more time it takes.

We could, of course, try to plan ahead to meet such data requirements. Tazewell, the town I mentioned earlier, tried to do so with its special survey. But the 1976 table II is so drastically changed from 1975 that only about 15 percent of the new table II can be filled out from the special survey data. How can we possibly plan ahead when requirements are constantly changing? Even when applications have been submitted, changing guidelines can force constant revision and additional submissions.

I'd like to ask you to envision, if you will, an army of little men, hidden away in the basements of huge office buildings. Twenty-four hours a day these little men do nothing but think up changes in existing guidelines and requirements for Federal programs. What new data can they ask for? What new restrictions can the little men invent? From a local point of view it would seem that Housing and Urban Development, the Economic Development Administration and the Environmental Protection Agency must employ whole battalions of these little men. Even the large cities have difficulty coping with these constant changes in existing programs.

The survey research projects conducted by some of the nonstatistical agencies sometimes verge on the ridiculous. Long, poorly designed forms arrive in the office. Definitions of specialized terms are vague and often missing entirely. Generally the form has not been field tested, a fact that becomes obvious as soon as you try to fill it out. But you do the best you can and send it back.

What happens to the data after that is anybody's guess because we rarely see any of the survey results. The development district receives only a small number of such forms compared to the average local government. Last year the city of Alcoa, population about 8,000 estimated that they spent approximately 2.5 man years filling out such questionnaires. Is it any wonder why so many forms end up in the trash can?

There are also agencies which collect data for administrative purposes but seem very reluctant to make this data available for planning use. Social Security is an excellent, or in this case, terrible example. It

took me 2 weeks of phone calling to locate anyone who could tell me anything about medicare or SSI payments in my counties, and then they couldn't tell me how many were certified, only how many claims were filed 1 year ago.

I was, and still am, appalled that the information was not readily available. I'm sure somebody has it someplace, but I never located the right name to call. The local office never heard of such a table and the regional office thought I was some sort of a nut, and maybe I was. But that data is very important in trying to plan a self-supporting rural health clinic. I'd still like to get it, but as a one-person operation I just ran out of time to track it down.

Statistical agencies have their problems. I do not like their policies on data availability for small areas. I will complain in a moment about their internal lack of coordination and consistency. But compared to the nonstatistical agencies, groups like the Census Bureau or the National Center of Health Statistics are a rare oasis of sanity and reasonability within the Federal bureaucracy.

The third point I wish to make today is that the need for coordination and consistence within the statistical agencies is at least as great as the need for coordination among the statistical agencies.

The National Center for Health Statistics provides a handy example, but it is not the only agency guilty of this type of thinking. NCHS publishes several different series of reports, the hospital and nursing home reports and the Family Health Interview Survey—all of which have been extremely useful to me.

But the series would be much more useful if the data from the three areas could be merged. Health planning is one of the areas I have worked with intensively. I would have given my right arm a few years ago to get some of that data merged to obtain some critical missing links for adequate facility planning. But the basis of the data collection for the different series are too diverse to allow for merger. I have been told that NCHS recognizes the need and that they are working on it, but when I ask for details, I never receive any.

The Bureau of the Census provides another example of this type. The Bureau conducts many different types of census, but because they are conducted at different times it is extremely difficult to mesh them.

Probably more embarrassing to any agency and certainly more confusing to the user is the lack of consistency within data products of the same division. For example, the 1973 population estimates used for revenue sharing did not agree with the 1973 population estimates published under the Federal-State Cooperation Program for Tennessee Counties. Yet both estimates come from the same group within the Census Bureau. Different methods were used to get the separate figures and the discrepancy wasn't very large in most counties but I wonder what would have happened if Campbell County had asked that the larger cooperative program figure of 29,100 be used rather than the revenue sharing estimate of \$28,398? After all, every little bit helps in a rural county.

The census of housing provides some very interesting inconsistencies. Depending on which published document or which summary count tape you use, you can get several different figures for units without complete plumbing, and several other items.

For example, the General Housing Characteristics lists 2,643 year-round housing units without complete plumbing in Cocks County. Detailed Housing Characteristics lists 2,483 year-round housing units without complete plumbing. The data from the First County Summary Tapes lists 2,626 such units. Try explaining which figure is the correct one to a nonstatistical minded planner who has managed to find all three. Or worse yet, try explaining to a funding agency employee who has compared his detail housing figure to your general housing figure and is calling to tell you you are wrong.

I do not like to criticize an existing system without having some constructive suggestions to give. Over the last 2 years major improvements have taken place in the way that both BLS and the Bureau of Economic Analysis publish their data, mainly in switching employment to county of residence and in publishing their data on SMSA counties separately as well as for the total. Both changes have improved the local usefulness of the data. I believe NCHS, with some prompting from the new health systems agency will solve their internal data merger problems.

What I do not see happening is a recognition that rural government is being cheated; more important, among the nonstatistical agencies I do not see any basic commitment to sanity. And it is insane to continue the repetitious collection of data already available, but I do not see an end in sight.

What can be done to correct the mess? Well, there are several things that can and should be done.

First, there has to be a conscious effort to overcome the unintentional statistical discrimination against rural governments. They are difficult, statistically, to work with because they are small. They are easy to forget because they are not well organized and vocal. But they are there and they deserve equal treatment. Perhaps the recent move back to the rural areas will bring them more attention.

Second, the major statistical agencies need to coordinate more within themselves as well as with other agencies, statistical or not.

Third, every effort must be made to coordinate the confusion of data collection by nonstatistical agencies. If necessary such collection should be forbidden except through a statistical agency.

Fourth, guidelines, regulations, and restrictions for Federal funding programs should be fixed for at least a 2-year period and preferably longer. When changes are issued, they should be issued in final form at least 6 months in advance of when they will take effect.

I'd like to interject here that many funding agencies take months and months to decide what their guidelines will be. Then they send them out and we're expected to act within 2 or 3 weeks. It just can't be done—at least in any reasonable fashion.

Finally, and most important, there must be a basic commitment to sane restraint on the part of the Federal agencies in the paperwork and data required from local governments.

One last comment. When someone on the ETDD staff or another agency comes to me asking about conducting a survey I have a five-point checklist I go over with them. It might help solve the nonstatistical agency data confusion if Federal agencies adopted the same checklist.



1. Is there a valid need for the data? All too often a survey is an excuse for not coming to grips with the real problem. No one really knows what the data will be used for except that by some miracle process it is going to provide the answer.

2. What is the exact need for, and use of, every data item to be collected? Many times a valuable piece of information is collected in the wrong form and becomes unusable for analysis. If an item is merely nice to know, it isn't worth collecting.

3. How much of the data needed is already available from a central source, published or unpublished? This data should then be collected from the central source and not as part of a broader survey.

4. Field test the form under the worst possible conditions to check on definitions and form design, et cetera. A question that makes sense in the office may make no sense to the person in the field trying to fill out the form.

And last, don't be afraid to call for help from someone else. No one person knows everything.

The five points are obvious commonsense. But commonsense is one commodity which seems very rare in the Federal bureaucracy today.

Mrs. SCHROEDER. Thank you so much. Your testimony was very refreshing. And it is always discouraging to find out how these programs that started out to be so helpful get sidetracked.

You mentioned that a lot of the time when you are harassed for data that you never see the final study. Have you ever asked for it?

Ms. GRIMM. A couple of times.

Mrs. SCHROEDER. Whatever happens to it?

Ms. GRIMM. I know from experience with my own planning group that very frequently when a new program is starting up, the initial reaction of the staff person assigned to that is, "Let's do a survey." I stop most of those surveys. But in the areas where the survey is done and the data comes in and instead of solving the problem they have another problem, what do they do with the data?

Mrs. SCHROEDER. What happens if you don't answer a lot of these?

Ms. GRIMM. That depends if it's a funding agency that funds us. They harass us steadily. We do come up with answers even though the numbers are next to impossible to get.

I have a little thing on my desk called Pam's crystal ball, and if all else fails I go to the crystal ball.

If nothing else, I send a short letter saying this is not applicable to us.

Mrs. SCHROEDER. And if you don't reply on those, you don't get the harassment?

Ms. GRIMM. Generally not.

Mrs. SCHROEDER. Do you have trouble with the State agencies doing the same kind of things?

Ms. GRIMM. Oh, yes.

Mrs. SCHROEDER. But if you point out that you just completed a Government, a Federal, survey similar to that, they don't accept that?

Ms. GRIMM. I'm not sure the State doesn't accept that. In a couple of cases they do accept that and then come back and say the Federal agency would not give them the data.

Mrs. SCHROEDER. They said the Federal agency would not give the State the data?



Ms. GRIMM. Not in the time that the State needed it.

Mrs. SCHROEDER. Thank you very much.

Mr. ROUSSELOT. You didn't use up much of your time.

Mrs. SCHROEDER. I like to try to keep it to 5 minutes.

Mr. ROUSSELOT. You're briefer than I am.

Thank you very much for your testimony. I agree with our chairperson that it's refreshing to hear your comments.

The Environmental Protection Agency is clearly one of the great products of our time.

Ms. GRIMM. I'm not sure you wanted to produce the particular product you produced.

Mr. ROUSSELOT. I had two gentlemen in my office this morning that are small manufacturers that are being put under some incredible things as a result of the EPA that's going to clean up everything.

Do you think on the basis of your many suggestions and recommendations that it would be helpful for Congress—you heard the previous testimony—for Congress to make an attempt to coordinate some of this information gathering activity? I have always found in my own office that when we—let's take a social security case. If we go to where the computers are we can get the ages. Have you tried going directly to the source? Or do you need, maybe, Congress to help coordinate this? Or what do you think? Would we be better at it, the Congress?

Ms. GRIMM. I think it might be worth a try. I think one of the problems here is that so many agencies collect data—

Mr. ROUSSELOT. Fifty-five.

Ms. GRIMM. Well, I know some of the agencies that aren't supposed to be collecting data are collecting data. And so much of it goes into someone's desk drawer. It is hard to keep track of the published data.

And often you call into an agency—I pester you people too—and they'll say, "No, we never heard of that kind of data." So one just has to keep calling around to the different sections of that agency until you locate the right person. And generally the secretaries are tremendous in knowing who the right person is. I tell the secretary what I want, and they'll get me the right person within two or three calls. But fighting your way into social security is a whole new experience.

Mr. ROUSSELOT. I agree with you. We constantly provide its benefits and then can't get any information from it.

I think your judgment as one charged with gathering research data in one part of Tennessee is valuable. Do you think Congress would fumble the ball, or would we be able to coordinate it?

Ms. GRIMM. I think a lot depends on who you pick to head it. If you put the right staff in there, it's going to be running for the goal line.

I think one thing that is extremely important and doesn't seem to be being done by any major agency is when they go out and talk to users, they tend to talk to the academic community. They talk to business marketing consultants. The census did recently attempt to talk to local government people. Well, local government people don't care about data unless they need a number for a form. They do not come down and talk to the planners for local governments who do need that data. And I would like to see some form of communication system set up between these agencies and local planning users.

Mr. ROUSSELOT. Have you talked to Mr. Barabba about it?

Ms. GRIMM. No; I'm not personally acquainted with Mr. Barabba.

Mr. ROUSSELOT. You should talk to Mr. Barabba before you leave Washington.

Ms. GRIMM. My plane leaves at 1:10.

Mr. ROUSSELOT. He has several committees that are supposed to help him with kinds of uses for data.

Ms. GRIMM. But it is a fairly recent occurrence that local planners are beginning to use it and are beginning to use it as much as they have in the past 5 or 6 years. For the first 4 years I was with the Development District, we were the only Development District in Tennessee out of nine who were concerned with research data. And now there is only one other.

Mrs. SCHROEDER. If the gentleman would yield.

You would then be in favor of Mr. Knowles' proposal? You would have a board of people who deal with statistics as an advisory committee?

Ms. GRIMM. I know that advisory committees are often misused, but I don't know any other way to open up a channel to these people. Any correspondence you send gets shuffled off someplace. Frequently, it comes to knowing the right person.

Mr. ROUSSELOT. Call your Congressman. That's the thing to do.

Mrs. SCHROEDER. Thanks; that's great.

Mr. ROUSSELOT. That's what they are there for, your Representatives, your Senators.

I believe your point is well taken, and I can't believe Mr. Barabba would not be willing to help. I know one of his representatives is here today, and we'll make sure that your testimony is given to him. I find him willing to improve the system, and I think your comments of accessibility are good.

Ms. GRIMM. I have complained about the agencies today, and I will continue to complain. But basically they have their problems, too. Basically, they do a very good job. I would like them to see that we people on the local level have our problems, too.

Mr. ROUSSELOT. Especially your comments about all these forms you have to fill out. We hear that, too, from local governments, institutions, and businesses of all kinds. I don't know if you are familiar with RESPA. This was a bill Congress passed to improve real estate settlement procedures, and we ended up adding \$150 per person because we gave them a form to fill out 1-inch thick.

I think you are to be congratulated for such thorough testimony and telling us how we can, as a Congress, encourage our agencies to be more helpful to you.

I would like to ask you to look at the report of the President's Commission on Federal Statistics.

Ms. GRIMM. I will.

Mr. ROUSSELOT. Have you looked at this? Are you familiar with it?

Ms. GRIMM. No; I am not.

Mr. ROUSSELOT. It was published back in 1971. There have been several printings.

Mrs. SCHROEDER. Thank you, Congressman.

Congressman Simon?

Mr. SIMON. I join my colleagues in praising your testimony. To use our chairwoman's phrase, it's refreshing.

The assumption of my two colleagues, from their questions is that you agree with the previous witness. But we haven't asked you specifically. Do you agree with Mr. Knowles?

Ms. GRIMM. Yes.

Mr. SIMON. You do?

Ms. GRIMM. Mr. Knowles made a number of points that I didn't feel I had time to make. I felt that many of the other witnesses would be making points about cooperation between the agencies, but I didn't think they would bring out any things that are specialized to local planning.

But I very much agree with Mr. Knowles.

Mr. SIMON. I come from a rural area. The largest city in my district is 26,000 population. What you say about small communities is absolutely true.

I would add one problem that I have run into, that is that regional groups like yours also tend to respond to the larger communities. When I say larger communities I'm saying communities of 15,000, because they have full-time personnel.

Ms. GRIMM. I'm grinning because we were under recent attack from a recently unelected mayor of Knoxville for not paying enough attention to Knoxville. And we have been under attack by other cities of 25,000 for paying too much attention to rural communities. We are very rural oriented.

Mr. SIMON. What you say about the Federal Government in general is that regional organizations tend to respond to people who come and ask for information and ask for help, and the communities that have full-time personnel are more likely to be calling for full-time help and assistance?

Ms. GRIMM. No; not in our area because the largest area, Knoxville, has its own local planning commission with a staff. And I get many many more calls from our rural areas than I do from Knoxville.

Mr. SIMON. I think your testimony is excellent, and I made some notes of some things I want to follow up on.

Mrs. SCHROEDER. I was talking to the counsel who was also impressed with your testimony and he doesn't have any questions either.

If you think of anything, you feel the need to communicate perhaps we can get some other members in the Office of Management and Budget in, and people who are coordinating and we can bring them before the committee and say, "Why aren't you coordinating?"

My biggest fear is if we create anything else, the first thing they will do is a survey of the surveys, and we'll all go bananas. We may seem just a tad hesitant in saying we don't have a solution, but anything you come up with we will listen to.

Did you have something else?

Mr. ROUSSELOT. We have an organization in southern California called the Southern California Association of Government, SCAG. And they have created some more problems by creating more paperwork for the city or county to fill out. Are you that kind of an agency or what?

Ms. GRIMM. We are created by enabling legislation at the State level.

Mr. ROUSSELOT. How are you funded?

Ms. GRIMM. We are funded with local assessments, 10 cents a head and further funded by matching funds by the State.

Mr. ROUSSELOT. Do you have power to tax?

Ms. GRIMM. No.

Mr. ROUSSELOT. Did you get that 10 cents' assessment from the State?

Ms. GRIMM. No; from the local government.

Mr. ROUSSELOT. Some of my local governments say to me, "Take SCAG off my back." And it was originally formed to eliminate problems of smog and mass transportation and all that.

But you are primarily a research operation?

Ms. GRIMM. We are primarily a planning organization. We are forbidden by law to implement.

Mr. ROUSSELOT. Who implements?

Ms. GRIMM. The local governments. They control our board and the local planning. We do create some paperwork. We try to keep it at an absolute minimum. We collect data on housing permits. We ask them to copy what they are already putting down. We don't ask them to tabulate it for us.

Mr. ROUSSELOT. I hope while you are here, today, you can talk to the representatives of the Census Bureau.

Mrs. SCHROEDER. Thank you.

#### STATEMENT OF MRS. ARYNESS JOY WICKENS

Mrs. WICKENS. Madam Chairwoman, I know it's not according to Hoyle for a private citizen to interrupt the committee, but I just felt that I could add something to this subject.

I was for many years in the office of the Deputy Commissioner of Labor Statistics and the Assistant Secretary of Manpower. And I was, once upon a time, in the business you are talking about, statistics.

In the mid-1960's the Bureau of the Budget set up a task force to gather information on State data needs. They had teams of people from the Federal agencies going out into three States.

I went into the State of South Carolina representing the Department of Labor. We investigated all the Federal programs that required applications, all sorts of data banks, forms, and details. There were two other States covered. I don't recall which they were.

Mr. ROUSSELOT. When was this?

Mrs. WICKENS. I would have to check it with the Bureau of the Budget. It was a program we ran with the Governor of South Carolina, and he told us the problems he saw with the overlapping of Federal Government surveys.

We talked with the local people. We went, for example, into an office where they were developing manpower programs and got their complaints about the numerous forms. They were all for different economic data and were required before a grant would be given.

And I suggest your staff may wish to look through this.

Mr. ROUSSELOT. Did you produce a report?

Mrs. WICKENS. The Budget Bureau produced an elaborate report.

Mr. ROUSSELOT. Elaborate scares me.

Mrs. WICKENS. What happened to it, I don't know.

Mr. ROUSSELOT. You don't know what happened to it?

Mrs. WICKENS. No. I know that within the Department of Labor we made some changes in the forms.

Mr. ROUSSELOT. Were you on this task force?

Mrs. WICKENS. Yes.

Mr. ROUSSELOT. When was the end product produced?

Mrs. WICKENS. It was produced very shortly—within, I should say, about 2 months after the field survey. It was done very rapidly.

Mr. ROUSSELOT. Can you give us a copy of it?

Mrs. WICKENS. I don't have it. I retired 6 years ago. I'm trying to remember the woman in the Bureau of the Budget who supervised this. I think she died.

Mrs. SCHROEDER. Thank you.

Mr. ROUSSELOT. Thank you.

Mrs. WICKENS. I'm sorry to interrupt.

Mrs. SCHROEDER. We are glad to get any help we can get.

Mr. ROUSSELOT. If you can scrounge up a copy, we would like to see it.

Mrs. SCHROEDER. Thank you very much.

[Whereupon, at 11:45 a.m., the hearing was adjourned.]



## COORDINATION OF STATISTICS

WEDNESDAY, FEBRUARY 25, 1976

U.S. HOUSE OF REPRESENTATIVES,  
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,  
SUBCOMMITTEE ON CENSUS AND POPULATION,  
*Washington, D.C.*

The subcommittee met at 10:20 a.m. in room 304, Cannon House Office Building, Hon. Patricia Schroeder (chairwoman of the subcommittee) presiding.

Mrs. SCHROEDER. The first witness we have this morning is Harry Trelogan, former Administrator, Statistical Reporting Service, USDA.

Welcome, and we are delighted to have you with us.

### STATEMENT OF HARRY C. TRELOGAN, FORMER ADMINISTRATOR, STATISTICAL REPORTING SERVICE, USDA

Mr. TRELOGAN. I have been asked to appear before this committee by virtue of the fact that I have been the Administrator of the Statistical Reporting Service for a number of years. I have recently retired, and I have written a paper for the OTA Committee, which is relevant to your subject.

My paper is entitled, "An Integrated Agricultural Data System." Copies of it are here, and I will just endeavor to quickly go through it and give some highlights.

The existing data system has been rendered more difficult for estimating and has been made more expensive because long established methods of collecting data have become obsolete. I refer to what we used to do in the Department of Agriculture to make crop and livestock estimates and also the means used for the census of agriculture.

The method for making estimates calls for a sampling procedure that would give due weight to large specialized farms as well as the prevalent types of farms. What we have been doing for some time is using sampling procedures without giving proper weight to the different kinds of farms.

Mrs. SCHROEDER. So the surveys have not distinguished between the types of farms?

Mr. TRELOGAN. They have adequately distinguished the forms nor given the proper weight to them in the estimates.

Mrs. SCHROEDER. Is that what you mean by the methods being obsolete?

Mr. TRELOGAN. That's correct.

Now, higher quality statistics are needed. The quality features most needed are: accuracy and dependability; timeliness in terms of fre-

quency of reports, short time intervals between surveys, and promptness in getting out results of surveys; also adequacy in terms of sufficient detail to meet the purposes. The latter requirement usually refers to geographic detail, number of items or species reported, and indications of quality of the products.

Implementation of area probability sampling, which the Statistical Reporting Service has been endeavoring to do for a number of years, as explained in the paper, laid the cornerstone for restructuring our entire agricultural data system. The new foundation, replacing the census of agriculture as the underpinning for crop and livestock estimates by providing annual benchmarks, occurred none too soon. It, being the only complete sampling frame available for American agriculture, is useful for supporting other parts of the agricultural data system.

The rapidity of change in farming has rendered the census of agriculture obsolete. The circumstances suggest that to continue taking the census of agriculture on the present pattern is a waste of time, effort, and money.

In the budget for 1975, the Statistical Reporting Service was granted an appropriation of \$1,225,000 to begin compiling farm or farmer's names for a general purpose list frame suitable for multi-frame probability sampling, which the Statistical Reporting Service is introducing in the nationwide statistical gathering system for the data. When this job is completed, the SRS will be in position to reduce the standard error for national estimates on crop and livestock species to 1 percent. Heretofore, we have had a goal of 2 percent, but found that it was inadequate for modern agriculture.

More importantly from the standpoint of this discussion, SRS would also be in position to obtain through sampling methods almost any kind of data needed from farms in the United States.

A head start has been made toward the acquisition of economic statistics now needed by the Government and the economy on a more current basis. The reason I say that is that the SRS—that's Statistical Reporting Service—has been called upon by a number of different agencies to get farm data for them on a current basis. These surveys have been incorporated into the system. The SRS will be coordinating data collection surveys for several different purposes that in the years gone by might have been done by the census of agriculture.

The proliferating demands for farm data causing repeated surveys of farmers to supply them is taxing the patience and ability of the farm respondents. This is showing up in the results of the current census, the census that was taken last, which has not been reported yet. There has evidently been more and more resistance.

The most promising means to minimize respondent fatigue and still meet the rising demands for data is to coordinate all the farm data requirements into a single system of surveys, thereby reducing both contacts and duplication.

Agricultural statistics have exercised the strongest cohesive force in the agricultural economy because they have provided a common fund of reliable information on which all segments of American agriculture depends.

One of the strong features of the Statistical Reporting Service's system of getting data, and the one feature that I propose to retain in



any integration of agricultural statistics, is cooperation with the State offices. SRS has State offices established throughout the United States most of which are operated in cooperation with the States. They have cooperation with 48 of the 50 States.

Through these voluntary arrangements, State and Federal agencies benefit. They benefit from cost savings by collecting data for their respective needs at the same time; from reducing respondent burden, by collecting their data together, thus avoiding repetitive inquiries; and from the assurance of compatible results so that reports issued by the two sets of agencies are consistent with each other.

This mutually beneficial State-Federal system of data collections is already in place and has demonstrated superiority. It's been in place for 50 years, but it's gradually gaining more cooperation from States to the point where we now have it from 48 of the 50 States.

It has the capacity for expansion to also collect data for clientele usually served by the census. The total job could be done much more expeditiously if the inquiries were spread out over a 5-year period rather than all collected in one fell swoop every 5 years.

This is true for a number of reasons; I will just try to cite a few by way of summarization.

Assuming an integrated system of the type that is proposed in my paper, opportunities for cost savings exist and they include: reducing the number of times individual farms need to be contacted to collect data; reducing the size of questionnaires or length of interviews for farm data collection by at least 25 percent, more for items needing only national or State estimates; eliminating the need for two agencies to compile and maintain lists of farmers in the United States identified by size groups, enterprises, and locations; eliminating the printing and distribution of a million census forms that are not used, or returned; eliminating the need for a precensus canvass in the effort to identify farms and verify control data; incorporating newly required data into an operating sampling scheme in less time and at less cost; utilizing satellite data more quickly to improve the accuracy of sample estimations; with success this may be translated into smaller, less expensive samples to get the same accuracy; and savings to the economy from greater accuracy.

Savings involving appropriated funds would be offset in part by increased funds needed to complete the compilation of a list sampling frame which has already been started in the Statistical Reporting Service. An additional \$3 million is required to make it operational for an integrated program.

In turning to the estimation of cost, I estimate that the main elements of the agricultural data system cost a total of about \$37.6 million annually now. The projected cost for an integrated program giving higher quality statistics covering the same ground in a typical future year is \$36 million.

These estimates make allowances for the cost increases and decreases discussed in the paper, except they exclude statistics collected for State agencies and for other Federal agencies than the statistical agencies. They also exclude statistical research and clearance activities presently assigned to SRS but not a part of the crop and livestock estimating system.

None of these exclusions bear on the budget or appropriations for the integrated services. None of these estimates make provisions for inflationary costs.

In conclusion, given the changes in agriculture and in methods of collection adopted by the census, it makes no sense to continue the census of agriculture. The Statistical Reporting Service, facing the same problems of technological change, has taken positive steps to solve them, thereby increasing the integrity of its public service and reducing the need for the census by presenting a more viable alternative for acquiring needed data. Thus the time has come to halt pandering with farm statistics by assuring that only data released in time to be useful is collected through an integrated system.

Mrs. SCHROEDER. Thank you very much, I really appreciate what you had to say, because as you probably know, we have a bill to do away with the agricultural census; we'll be discussing that later on.

Mr. TRELOGAN. I want to make the point: an integrated system, one system, not two.

Mrs. SCHROEDER. I think that's so important. My question is: How do you implement it? You said on the one hand you're cooperating with 48 States, but on the other hand you also stated that the respondents have about had it from the constant barrage of questionnaires. So, even the integration and cooperation is not enough; how do we get more cooperation?

Mr. TRELOGAN. We are very fortunate in this country; we have had remarkable cooperation from our farmers. All of the data we get, except the census data, with one or two minor exceptions, is given to us voluntarily by farmers. We have done a remarkable job of developing a system of annual estimates; month by month we report on the status of the crop and livestock estimates all on a voluntary basis.

The census is mandatory, but it is not getting its data.

Mrs. SCHROEDER. On the livestock and crop estimates, my understanding is many countries do this with satellites and do it more accurately.

Mr. TRELOGAN. No countries do it with satellites. Do not be fooled.

We are trying to find out how to do it; it's still in a highly experimental stage.

SRS is trying to find out how we can use satellites to supplement data collection. Satellites at the very best can only get a fraction of data we now get, a small fraction.

Mrs. SCHROEDER. Is it better for crop estimates?

Mr. TRELOGAN. Certainly.

You see, we start out on an annual cycle of crop estimates, starting out with intentions to plant; you don't get that from the satellite; you get that from the farmer. SRS makes two surveys of intentions, then we get planted acreage; that you don't get from a satellite as early. These are very important data.

Mrs. SCHROEDER. But you might be able to get that. I think on the satellite picture you can see tilling.

Mr. TRELOGAN. Technology is not advanced that far yet, and it's not in sight either. I speak from long experience of trying to use the satellites. We have done a lot of research on it, and we hope to use it quite effectively. I've got a section in my paper on how we hope to use

satellites to supplement our current system but certainly not to replace it.

The most promising place for the use of satellites at this time is in trying to get data in foreign areas where we can't get any data now, but even that isn't practical at this stage of the game.

What we are doing is carrying on an experiment at this time to find out if we can do it for wheat in this country and Canada. That hasn't been successful yet.

Mrs. SCHROEDER. Let's go back to how to integrate the SRS surveys, and the census of agriculture; how do we do this?

Mr. TRELOGAN. You make one system instead of two systems; that's what integration means. The scheme that I have sketched here in the paper is to take over the same 5-year length of time that you now have for the census and make annual sample surveys that add up to at least as much if not more than we now get from the census plus our system of crop and livestock estimates. We integrate them so that each year we're taking part of what we now get from the census and putting it together so in 5 years we have at least as much as we have now.

Mrs. SCHROEDER. Who is to do the surveys?

Mr. TRELOGAN. That has yet to be determined, but I suggest in the paper that the agency best equipped now to do it is the Department of Agriculture. The paper does not discuss the bureaucracy or the organization.

I'm saying this is possible; I'm saying that the Statistical Reporting Service at this stage of the game has developed far more in the way of techniques and methods that are suitable to an integrated system.

Mrs. SCHROEDER. You do not feel that there is a problem in the agricultural or rural development area, one that we heard about yesterday, that the States are sending out the same kind of information data and sample surveys and accounting and everything else that the Federal Government is doing so that there is all sorts of duplication.

Mr. TRELOGAN. We recognized that early in the estimating service. The Statistical Reporting Service's crop and livestock estimates started well over 100 years ago.

In 1917—we started working with certain States before that—but, in 1917, we started a concerted effort to try to get on a cooperative basis with the States; purely voluntarily. Neither they nor we are required to do it by law. In the interim since then, SRS has succeeded in getting 48 of the States to currently cooperate in varying degrees.

There is no standardization for this. You get cooperation as you can. We try collecting data together, and we try to analyze the data and prepare them in the same offices and make sure they are not inconsistent with each other when they are issued.

Mrs. SCHROEDER. The standardization causes you a tremendous problem, doesn't it?

Mr. TRELOGAN. Yes.

Mrs. SCHROEDER. Doesn't it often require that you do your own sampling?

Mr. TRELOGAN. Yes; we do. The Federal Government, by law, makes national and State estimates, and it does its sampling for that. The

State work that we do is State estimates that are usually over and above what the Federal Government gets out.

It's hard to generalize about 50 States, but many, many States have specialized laws for specialized information they want within the State, or more detail on crops that are important within the State than the Federal Government gets for them.

That's the nature of the work they do, which we incorporate and do together, because when we do it together, we can do it much more efficiently than we could with separate agencies. Very much more important is to make sure they are consistent with each other so we aren't giving different results.

Mrs. SCHROEDER. You think that this has solved your problem and you are getting the proper amount of response, and voluntary response at that, whereas, the agriculture census has got real problems in getting a complete response.

Mr. TRELOGAN. Let me make it clear to you that the problem of getting voluntary response is never ending; you work on it every day in every way you can. That's one of our biggest functions.

There is no question but what our State cooperation helps us very much in getting that. We get the State officials to back us and help us with the pleas to the farmers to help induce them to give us information. It's all voluntary; we can not force them to respond.

In these kinds of statistical surveys that we have been introducing in recent years, which calls for extensive cooperation on the part of the farmers, we have been getting on the order of 98-percent cooperation from them, even though it's costing the farmers money in many cases.

Mrs. SCHROEDER. Maybe another reason for your high voluntary response rate is you also publish the data you get.

Mr. TRELOGAN. Yes; that's what we get it for.

Mrs. SCHROEDER. Yesterday we were hearing that half the time people would fill out a form and then later on call to ask the results, only to get the response: "We don't know what's happened to them."

Mr. TRELOGAN. We try to get out virtually all of our results of national surveys within 10 days to 2 weeks after we make them.

Mrs. SCHROEDER. How can a farmer get that information that he participated in gathering?

Mr. TRELOGAN. The dissemination of our information is primarily through the media, the newspapers, the radio, the television, and the farm press. Now, we do put out literally millions of reports every year, but they go to only a relatively few farmers because the mail service and other things makes it delayed to the point that farmers don't want to wait that long to get it, and there isn't any sense in looking at the details if you get it disseminated by the press.

You recognize that this is a huge system covering on the order of 160 crops and 20 to 30 livestock items. No farmer follows them all. They usually follow the specialized treatment they get in different kinds of press coverage to follow our data.

We get our data out to the media as quickly as possible. You are probably familiar with our lockup system where we try to make it available to the entire public at one time in a short time after it's collected. That is a system we're working on all the time trying to speed it up.

We're finding that the modern methods don't always speed it up. The computer has helped us in many ways; but it hasn't helped to speed it up. The reason is that the computer has been more valuable to us in gaining greater accuracy than it has been in gaining time.

Mrs. SCHROEDER. What does that 1-percent error mean, moneywise?

Mr. TRELOGAN. I would hesitate to put a specific dollar figure on it. Accuracy in this case is a hard thing to estimate, except in such estimates that we've made, we find it's worth far more than the cost of research we put into it.

We have had some people make studies of that from that standpoint rather than from the standpoint of dollars and cents, because this accuracy means many things to many people in the trading market, it means many things to other people. We have no way of putting our finger on all of the benefits.

When we look at it as economists in terms of a general advantage, we find that the advantages far outweigh the costs.

Mrs. SCHROEDER. If you are off by 1 percent or so, who is most apt to be after you, the traders?

Mr. TRELOGAN. If we could stay within 1 percent, I don't think anybody would be after us because for most agricultural data, it's so expensive to get more accurate than that that it isn't worth the cost.

The cost is usually borne by the Federal Government; the Federal Government hasn't, until recently, been willing to bear the cost that would get us within a 1-percent range.

I told you that the system of multiple frame samples is not completely worked out yet; we're still working.

Mrs. SCHROEDER. I guess what I'm driving at is that we have so much unhappiness with the way the Federal Government and the State governments have normally collected statistics. While there are some problems in your area, there seem to be many fewer problems that we've heard from other areas.

One of the reasons I am wondering if your area isn't better coordinated, better organized, and has better participation is maybe because of the economics of it. Everybody can see a real, vital reason for participating, even more than in some of the other areas.

Mr. TRELOGAN. You're correct. Every farmer is interested in these statistics; every trader in the marketplace is.

This was recognized in our colonial days by George Washington who advocated it first, this system of reporting the data to farmers. It was recognized by Abraham Lincoln, when he started what is essentially the system we are on now, when he was trying to get the information to induce the British that they had a stake in our agriculture in the North not just in the cotton production in the South. Those kinds of influences are broad, but the farmers' interest is every day, every year, every crop.

Mrs. SCHROEDER. Whereas, HEW's housing surveys aren't going to be thought important because they don't seem quite as relevant.

Mr. TRELOGAN. I think among the farmers the weather beats this, but they want to know how their crops are doing and what the prices are. This is an inherent interest they have right from the beginning. That interest is the only way you can account for them putting forth the effort to give us all of this information for over 100 years voluntarily.

Mrs. SCHROEDER. Thank you.

Mr. ROUSSELOT, do you have any questions?

Mr. ROUSSELOT. I don't think so; I regret that I wasn't here sooner.

Mr. TRELOGAN. If I may interrupt, I have a summary I could go over if you like.

Mr. ROUSSELOT. I have seen it.

This is probably a little far afield, but how important are agricultural statistics and data systems to the future commodity market?

Mr. TRELOGAN. I would like to reverse that and say how important is the future commodity market to agricultural statistics and data systems.

Mr. ROUSSELOT. All right, the reverse of it.

Mr. TRELOGAN. I'll take it both ways.

The future commodity market operates on uncertainty. It includes people willing to accept risk on the basis of beliefs or differences in views of what the future holds. They operate most efficiently if they start from a solid basis of what is; that's what we provide.

The future's market doesn't get very far unless it has some sort of statistical base or knowledge base; they don't get very far on sheer speculation. The backbone of a future's market in this country is the people who hedge for legitimate business purposes. They are, you might say, passing off the risk to the speculators who are willing to take the risk in future's market.

While the future's market is in our system, quite important in our major crops, it is not absolutely essential for many agricultural operations and isn't in existence in many of them.

Mr. ROUSSELOT. To make it a more precise science, should we have a more timely survey of product statistics, commodity statistics, or is it worth the cost?

Mr. TRELOGAN. Yes; we have a very good one right now; we have the best in the world here by far, and it is well worth the cost. There are several different features to be considered.

The first is accuracy and reliability; that's what we're talking about and that's where the census is falling down now. That's why we have had to dispense with using the Census of Agriculture for purposes of checking current estimates. So accuracy is one thing.

Mr. ROUSSELOT. What do they do? I wasn't here. Do they do a monthly survey?

Mr. TRELOGAN. We have so many it's hard for me to generalize. On the major crops during the growing season, we put out monthly reports. Starting in January, we get out intention to plant, and we follow that up in March again.

Then when the planting season starts, we report planted acreage in June. This is not the only time; we're doing this for winter wheat back in the fall.

As a general pattern, then month by month after the planting season, we report what the prospects of the crop are in terms of—it's acreage times yield we're talking about—so, we are talking in terms of the prospects of the crop in terms of the ultimate yield from this year's crop. We do that for crop after crop.

Mr. ROUSSELOT. Is it timely enough, the information?

Mr. TRELOGAN. No; the people who are interested in this business are insatiable in terms of timeliness. This timeliness is a matter of

judgment. I can say we have the best by far; I think it's very good. I see some places where we could improve on timeliness. In general, I think we are very fortunate.

One of our big concerns with the census is we don't get the results in a timely enough fashion for modern agriculture, even for checking our data, and that's what we formerly used the census for.

Mr. ROUSSELOT. Would it be a substantial cost factor to improve timeliness?

Mr. TRELOGAN. No; I am trying to tell you that by integrating this system, we can do the whole system at less cost and get the timeliness, too, by integrating it, but that would do away with a 5-year census of agriculture.

Mrs. SCHROEDER. We're talking about a jurisdictional dispute.

Mr. ROUSSELOT. I know that.

Mr. TRELOGAN. I would like to make the point that this is not a jurisdictional dispute I am trying to talk about; I favor the Statistical Reporting Service, having been administrator of it; that's correct. My paper does not suggest it has to be done that way. General statisticians have a difficult time understanding agricultural statistics.

Mrs. SCHROEDER. Mr. Taeuber, do you have any questions?

Mr. TAEUBER. On this question of timeliness, obviously, a once-every-5-year census can't provide monthly national crop reports. Are most of your crop reports national?

Mr. TRELOGAN. No.

Mr. TAEUBER. The concern of an individual farmer is at what level of geographic detail, national or State?

Mr. TRELOGAN. Well, the individual farmer is usually interested in the localized situation. If he is planning ahead, he knows he has to look at the national and State situations as to whether or not he is going to plant a crop or invest his money in certain livestock, and things of that sort.

During the growing season when the crop is in the ground, he has gone beyond that planning. Now he is thinking about what he is going to invest, what he has to have in the way of fertilizer, machinery, when he is going to market and at what price. Then he is interested very much in the local situation, but he gets his leads from what's happening nationally because he knows his local market doesn't make the prices on such things as wheat, corn, oats, cattle, hogs; those are pretty much the national prices that his local market will follow very closely.

Depending on the nature of the farmer and his interests, he is interested in the local situation first from the standpoint of operations, but in terms of his planning, he is looking at the broader scope of statistics.

Mr. TAEUBER. There are two types of data in your system. One is the crop and livestock measurement and forecasts, and the other is the general need for data about the rural sector of our society. Will the survey system get both types of needs to the county level?

Mr. TRELOGAN. Yes; I maintain we would provide them at less cost and burden on the farmer, at greater accuracy, and in far less cost to the Government because it would be on a sampling basis and not on a purported full count basis which is not accomplished.

Mr. TAEUBER. Is one major problem the identification of what is meant by a farm, especially at the low end?



Mr. TRELOGAN. Yes; that is one of our problems, identifying farms, because of the very intricate business management systems we have today. We have to make sure that we're identifying them in a uniform fashion across the country. We have to take into account the old family farm, the partnerships, corporations, and all the myriads of different kinds of arrangements for farming today compared to what we did when we started out in this game.

We try to keep up with them and make sure that we have it standardized throughout the country so that it is an accurate reflection of the number of farms and their production.

Mr. TAEUBER. Changing the definition of a farm wouldn't greatly affect the crop and livestock estimates.

Mr. TRELOGAN. Not on the national estimates; on the State estimates, the impact is more. If you are talking about county estimates, the impact is greater, because no longer do we have a uniform agriculture even within counties.

That's one of the main reasons why we have to go to the probability sampling methods to make our estimates today compared with what we did, which was less expensive, for the first 100 years of the farm estimate system. Previously, we mailed questionnaires. Now you cannot rely on that system entirely.

Mrs. SCHROEDER. Thank you very much. We really appreciate your coming and presenting your paper.

[The paper which was presented by Mr. Trelogan is as follows:]

#### AN INTEGRATED AGRICULTURAL DATA SYSTEM

(By Harry C. Trelogan)

##### SUMMARY

Two sets of developments have necessitated changes in methods of collecting farm statistics. They are technological advances in farming and simultaneous progress in statistical technology.

Quality checks on the 1964 and 1969 Censuses of Agriculture indicated incompleteness of 8 and 17.6 percent respectively. Typically, years rather than months elapsed between the time of the collection of the data and the publication of the reports. Census data no longer meet users' needs with respect to accuracy and timeliness.

A program of sample surveys is proposed to integrate the collection of agricultural data now performed annually or more frequently by the Statistical Reporting Service of the Department of Agriculture and quinquennially by the Bureau of the Census in the Department of Commerce. The potentials for gaining efficiency of estimation, economies of scale, and improved employment conditions are substantial through proper design of surveys to meet differing needs.

Methods for probability sampling to yield greater accuracy of estimates are developed and in use for current crop and livestock estimates. They are funded for expansion into the gathering of economic data heretofore made available after serious delays by the Census of Agriculture.

A list sampling frame is being started in the SRS that will facilitate efficient probability sampling for making all farm estimates. Since 1970, improved samples have been developed for hog and cattle estimates. With these developments the stage is set for avoidance of considerable unnecessary duplication of work through an integrated system of farm data collection.

The requests for additional timely and more accurate data relating to United States food and fiber production are becoming more urgent. The burden on farmers to supply data is testing their endurance, as evidenced by resistance to answering recent census inquiries. Integration of the present systems offers opportunities for alleviating these problems with no more expenditures for data collection than are now projected.



### *Requisites of farm statistics*

Advances in farming have led inexorably to larger and more specialized units. While this has resulted in fewer and more conspicuous farming operations and seemingly easier work to estimate aggregate production, actually the job of estimating has been made more difficult and expensive because long-established earlier methods became obsolete. No longer can reliance be placed upon simply a large sample of the farms to be representative of all farms in the country. In contrast with 30 years ago, the size and specialization of farms has reached the point where one is unlikely to gain a valid impression of the agricultural production of a county by taking a random look at a few farms. A single farm may be unique and also account for virtually all the production of particular crops or livestock in a given area. It cannot be ignored in the estimating process. Consequently, the procedure for making estimates calls for a sampling procedure that will give due weight to these large, specialized farms as well as the prevalent types.

Growth of individual farming units has also engendered demand for more accurate estimates and forecasts of farm production aggregated by counties, states, regions, and nationally. The operational units have reached such dimensions that farm families can no longer finance the kinds of equipment or the volume of supplies and services needed without resort to commercial credit. Both the farm management and creditors require reliable information on existing and prospective supplies of farm produce before making the investments or assuming the risks of putting together a viable farming operation in today's agriculture in the United States.

Added to this demand for dependable statistics is that of manifold businesses supplying or servicing farms that must keep tab on farm production to intelligently plan their operations. Assuming greater importance in recent years are the needs of national and international planners and diplomats for protecting large populations now dependent upon United States for supplies.

Higher quality statistics are now required. The quality features most needed are: (1) accuracy and dependability; (2) timeliness in terms of frequency of reports, short time intervals between surveys, and promptness in getting out results of surveys; and (3) adequacy in terms of sufficient detail to meet the purposes. The latter requirement usually refers to geographical detail, number of items or species reported, and indications of quality of products. Almost invariably greater expense is incurred to obtain improvement in any of these quality factors.

### *Steps taken to meet requirements*

Confronted with shortcomings in bases for sampling and more demanding requirements for frequent, detailed, and especially accurate data, the U.S. Department of Agriculture (USDA) has devised feasible means for getting the information. The first step is to collect authentic data from farms quickly and in a form that can be readily transformed into estimates and forecasts useful to economic analysts and business operators, including farmers.

Fortunately, the theory and practice of statistics has advanced along with farming, so the problem is largely one of adapting new tools to the job. As with farming, these new tools are far more expensive than the old tools. This is especially true of the current estimates of production made by the Statistical Reporting Service (SRS), where the notoriously inexpensive mail questionnaire system had been perfected for over 100 years. (1) It performed well in this country, where we had the advantages of a literate farmer population willing to give the Government information, and so long as we had an inexpensive, reliable rural mail service and a dependable five-year Census of Agriculture to periodically true-up current estimates.

The inadequacy of the old tools came to public attention following a 10 percent error in the cotton production estimate for 1952. Through research for new methods, instigated by this incident and directed by the House Agriculture Appropriations Subcommittee, a probability sample was designed to replace the previous system. Over a period of 14 years, an area probability sample was put into operation in the 48 contiguous states.<sup>1</sup>

<sup>1</sup> Eight years of research and pilot operations preceded the initiation of enumerative surveys to collect these data in 11 southern and 4 midwestern states in 1961. Thereafter, it was spread across the country as follows: 1962, 5 additional states; 1963, 4 states; 1964, 8 states; 1965, 4 states; 1966, 5 states; and 1967, 7 states. New appropriations for the 48 states totalled \$4,137,000.

The probability sampling method was initially adopted in the form of an area sample based upon a complete sampling frame for the 48 conterminous states. (2) (3) It was designed to provide national estimates annually with a 2 percent standard error and has replaced the role of the Census of Agriculture in providing benchmarks.

Implementation of area probability sampling for the entire country laid the cornerstone for restructuring the entire agricultural data system. This new foundation, replacing the Census of Agriculture as the underpinning for crop and livestock estimates by providing annual benchmarks, occurred none too soon. It, being the only complete sampling frame available for American agriculture, is useful for backstopping other parts of an agricultural statistical program

#### *Census difficulties*

The rapidity of change in farming had rendered the Census of Agriculture obsolete. Typically, from three to seven years elapsed from the time an annual estimate was made before a new benchmark was available for comparison. In view of the fact that the number of farms raising dairy cattle, for instance, dropped 40 percent between the 1954 and 1959 Censuses of Agriculture, the old system would no longer suffice. Changes of similar magnitude have occurred repeatedly, necessitating faster methods for getting such basic data as the number of farms, land in cultivation, acreages of major crops, and livestock inventories. These data furnish the undergirding for estimates and forecasts month by month throughout the year.

As farms became larger, requiring huge investments, the structure of ownership changed to accumulate enough capital. Many farms integrated horizontally, causing the farm operations to be done as separated tracts sometimes transcending political boundaries. (12) They also integrated vertically, with marketing firms supplying factors of production or processing or distributing the farm output. As these developments occurred, the concept of a Census of Agriculture as originally conceived—i.e., a full count of independently owned family farms—became an anachronism.

Furthermore, the method of collection, using temporarily recruited canvassers for a few weeks once every five years, became impractical. Qualified interviewers became more difficult to find at the low rates paid, and the job became more difficult, involving more personal and intricate information about the ownership relationships and sources of capital. To overcome some of these troubles, the Bureau of Census began to collect the Census of Agriculture by mail.

Then they were confronted with two other major problems. One was to get a satisfactory mailing list of the farms. This has never been adequately solved, judging from the incompleteness of coverage that has evidently been growing in successive censuses.

A quality check made by carefully and thoroughly re-canvassing a sub-sample of farms following the 1964 Census indicated 8 percent incompleteness. The quality check for the 1969 Census made from data collected in the SRS enumerative surveys using the area sampling frame showed 17.6 percent incompleteness. (4) This check method, by the way, was far less expensive, much more effective, and added no burden to farm correspondents.

With incompleteness of the magnitudes experienced, the Census took on the characteristics of a large but uncontrolled sample. As such, its accuracy could not be measured with statistical precision. The sampling method adopted for the 1969 Census of taking one half of the small farms, construed to be those producing less than \$2,500 of sales, also suffered from being an uncontrolled sample. These circumstances dictated considerable adjustment before crop estimators could use the data. The problem was particularly onerous in the case of livestock because the surveys are taken for different seasons of the year, and in the case of cattle, for instance, the 1969 estimated incompleteness was 8.5 million head located on 298,000 farms. (4)

These limitations pertain also to economic data obtained by the Census of Agriculture. For 1974 the census definition of a farm has been changed, so that results will probably be reported with less coverage (5) As we will see later, a shift to SRS for use of the probability sampling frames to acquire economic data is well underway.

The circumstances suggest that to continue taking a Census of Agriculture on the present pattern is a waste of time, effort, and money.

### *Quest for greater accuracy at less cost*

Before the new area probability sampling became fully operative in the SRS, it became evident that the goal of a 2 percent standard error would not be adequate. The results of the 1964 Census of Agriculture did not become available to the Department of Agriculture for making revisions in its livestock estimates until February 1967. Total cattle estimates had to be revised upward by 2 percent to make the two series consistent. The revisions caused an uproar from cattlemen, who pointed out that they had been misled into raising more cattle during the years since 1959 when the estimating error was accumulating. Price analysts judging from current estimates of cattle inventories and market news slaughter data had concluded that the cattle cycle had turned downward and advised farmers that the price prospects were very favorable. As a consequence of the revision, the price outlook was reversed, causing financial disaster for some and consternation among growers generally.

Two conclusions drawn from this experience were: (1) The area probability sample was more efficient for estimating crops than for livestock; and (2) The former goal of achieving a 2 percent standard error would no longer suffice. To meet these problems, it was further concluded that the area sample needed to be bolstered by less costly methods than simply expanding the existing sample, the usual method for gaining accuracy.

A new method was devised by SRS based on theoretical research by Professor H. O. Hartley of Texas A&M University, which indicated how results from two sampling frames could be embodied into a single probability estimate. This opened a new way for SRS to take advantage of the less expensive mail survey to acquire additional data to bolster the estimates.<sup>3</sup> The major requirement to achieve the attributes of a probability sample was that the samples canvassed by mail be drawn from a list of all the farms growing the products being estimated in the state or nation. Associated with the names and addresses, sufficient control information is needed to draw stratified samples. The farms in each stratum have predetermined probabilities of being selected according to known characteristics such as approximate size. The control data, therefore, include, in addition to location, the farm enterprises and some indication of the size of each. (6)

### *Search for lists*

Inquiring into the possibilities of developing a suitable list led the SRS to seek cooperation with the Bureau of the Census because it was obvious that a similar list would be needed by them if the Census of Agriculture were to be taken by mail. Furthermore, it was apparent that the compilation and maintenance of such a list for the United States would be expensive—on the order of \$5 million a year. An early conclusion was that the public would not likely countenance two agencies of the Government incurring the expense and bothering the farmers to maintain independent lists. The best starting point for this pioneering effort, which was going to involve the combining of lists from many sources, was to get the list of taxpayers reporting income from farming to the Internal Revenue Service (IRS). Inasmuch as the Bureau of the Census already had access to this source, cooperation with the Bureau appeared promising, and SRS was encouraged by the Bureau that it might be worked out, although some hurdles had to be overcome. One of these involved SRS getting approval to use IRS lists, since the permission granted to the Census Bureau did not extend to the SRS.

The procedure was to get a Presidential order granting access to the lists. After three years of negotiation, President Nixon issued such an order with the White House determining the timing and the manner for publication of the order. When the announcement was made, a furor ensued, resulting in congressional hearings at which SRS was advised that \$5 million was not to be regarded as too high a cost to preserve the privacy of IRS records from another government agency for statistical purposes. Other means had to be found for SRS to begin its compilation of suitable lists.

Presumably, the list compiled for the previous census might serve as a starting point. The Census Bureau ruled out this source for SRS, pointing out that under law it was not allowed to reveal such information. Since SRS had the same

<sup>3</sup> To gain the advantage of an expanded probability sample without incurring the very high costs of sending enumerators out to find the farms as in the area samples, the SRS adopted a multiframe system for different kinds of estimates. It consisted of the area frame, a probability list frame, and old mailing lists. The latter were used primarily for state estimates.

restrictions imposed by regulation and since both agencies would benefit from combining their lists, it was believed that a single farm register could be contributed to and be used by both agencies. Several years of efforts were unsuccessful in getting the Bureau of Census to contribute to such an arrangement. Meanwhile, the viability of the census lists was deteriorating, being at least five years out of date.

During this hiatus the SRS was conducting research on how to compile lists useful for the purpose. As appropriations were made available, SRS began in 1970 to introduce the use of these on a limited scale, notably in estimating hogs (ultimately in 23 states) and cattle (in 38 states).<sup>3</sup> The experience with livestock clearly demonstrated the practicability of the method and that substantial improvement in accuracy could be achieved. Both the research and the experience support the belief that the most effective approach will be to compile list frames on a state-by-state basis because useful sources of names vary so much between states. Depending upon provisions for state farm censuses, the incidence of different regulations such as brand registrations, the location of markets with available records, and numerous other circumstances, the jobs are quite different from state to state.

Conversely, no national source of names has been identified that will yield a list consistently by states that has the necessary attributes of being clean, current, and complete. To be clean, a name must appear once and only once as the authentic source of information about a farm operation. To be current, the information on ownership should be authentic for the current year, and to be complete, all farm enterprises should be included. Unfortunately, the largest known lists compiled by the Agriculture Stabilization and Conservation Service are deficient in all of these qualities and are inconsistent by states.

Consequently, the SRS asked Congress for appropriations to compile and maintain general purpose farm lists, as is done on a restricted scale for livestock estimating. In the budget for 1975, SRS was granted an appropriation of \$1,225,000 to begin compiling the names for a general purpose list frame suitable for multiframe probability sampling. When this job is completed, the SRS will be in position to reduce the standard error for national estimates for major crop and livestock species to 1 percent.

More importantly from the standpoint of this discussion, it will also be in position to obtain through sampling methods almost any kind of data needed from farms in the United States.

#### *Prospects for additional data collection*

A headstart has already been made toward the acquisition of economic statistics now needed by the Government and the economy on a more current basis. Three years ago the SRS started a transition to the annual collection of data on farm expenditures for updating the weights used to compare the indexes of prices received and prices paid by farmers. Heretofore the data were collected in large national surveys intended to be taken about every ten years. (7) Owing to the large appropriations needed when they were scheduled, they were actually taken less frequently, to the detriment of the indexes. It is anticipated that the collection of these annual data may be coordinated with other economic data collected, especially if data are collected on a regularly scheduled basis. The collection of such data is in prospect for the immediate future.

For many years SRS has collected economic information from farmers for the Economic Research Service. Much of this has been done annually with little or no compensation by adding questions to mail questionnaire surveys scheduled in regular crop-reporting programs. Closer public scrutiny of economic analyses and an accompanying demand for greater accuracy caused the Office of Management and Budget (OMB) to rule that data collected for them be put on a more acceptable statistical footing. Consequently, SRS has adapted probability sampling methods and expanded the scope of data collected to accommodate these requirements with ERS financing the added costs.

SRS likewise has been called upon to supply farm data for nine other agencies in the Department of Agriculture and seven federal agencies outside the Department of Agriculture in the last five years.<sup>4</sup> These special requests for data

<sup>3</sup> Hogs and pigs estimated from multiframe samples were introduced in five states in 1970; five additional states in 1971; four states in 1973; and nine states in 1975. The 23 states cover 96 percent of the hog population. Coincidentally, the cattle multiframe samples were introduced in 38 states covering 96 percent of the population. \$2,646,900 is the present appropriation for these livestock estimates.

<sup>4</sup> GAO, NASA, AID, Departments of Commerce, Interior, Labor, and HUD.

usually involve economic data such as utilization of factors of production and costs. In fiscal year 1975, for example, SRS received \$3.2 million for these services for other agencies that needed current data, promptly reported. Two thirds of these data were obtained by utilizing the area probability sampling frame.

In 1965 ERS was directed by Congress to analyze costs of production for cotton. Collection of data for this and related studies was done by SRS. This turned out to be a forerunner of similar studies in subsequent years. In 1974 and 1975 there has been a veritable eruption of needs for more current data on farm costs and income. They have been instigated by several developments, among them the imposition of price ceilings on farm products, revelation of defects in farm income estimates, and efforts to obtain better agricultural income and expenditure statistics for use in the national economic accounts—a very demanding system that has been developed in the Department of Commerce under the guidance of the OMB and the Council of Economic Advisors.

To help meet the needs for additional and more accurate current economic data, the ERS was given \$1,380,000 to make an annual economic survey in addition to farm cost analyses. In 1975 ERS was appropriated \$670,000 for wheat, feed grains, and dairy costs studies that were called for by the Agriculture and Consumer Production Act of 1973. It is anticipated that about \$1.9 million will be transferred to SRS to collect the data for these studies beginning next year. Multiframe probability sampling surveys will be employed for the purpose. Thus, SRS will be coordinating data collection surveys for several different purposes that in years gone by might have been done with census data but that now require up-to-date information from a fast-changing agricultural economy. The ability and willingness of SRS to collect these data closely related to census data is clearly demonstrated.

#### *Respondent fatigue*

The proliferating demands for farm data causing repeated surveys of farmers to supply them is taxing the patience and ability of farm respondents. Operators of sufficient size and scope to be included in every sample usually have well-organized management records and professional accountants or bookkeepers to facilitate their response. Their burden can be weighed against the public's right to know of operations that significantly affect the food or fiber supply of the state or nation. It can be regarded as one of the costs of being big in our society. Less influential and specialized operators find the burden not only onerous but more difficult to respond to, even though they may not be included in every sample.

Respondent fatigue has been particularly noticeable in recent census as resistance to reporting has grown. One can better understand this reaction if he realizes that a small farmer is likely to receive a form containing about 200 questions to which he has to react in an intelligent manner, ascertaining which questions apply in his case and giving the information. He is reminded that the law requires his response. The large farmer is apt to receive in the mail, with some 750 questions, a form designed for him to fill out and return as required by law. (8)

Incompleteness of returns experienced in taking the Census of Agriculture is partially attributable to deliberate refusals to reply and partially to inability to contact the farm operators.

In the effort to reduce the latter problem, many more census forms were sent out than there were people farming. For the 1974 census, 4.2 million questionnaire forms were mailed out. This compares with 2.7 million farms counted in the previous census. Nevertheless, it appears probable that a substantial incompleteness will occur again. Inasmuch as efforts are still underway to get 1974 census returns, it is premature to judge the amount of the shortfall.

A proposal to alleviate problems of lack of contact and reduce overkill in mail-outs is to conduct a precensus canvass to locate farmers and to obtain preliminary information regarding their size and types of enterprises. This will compound the fatigue problems, but it is hoped that the subsequent distribution of the most appropriate questionnaire forms would be offsetting.

An important secondary benefit sought in sampling schemes adopted by SRS was a reduction in the number of reports needed to get adequate data for estimating national and state totals. With judicious use of control information, the number of farms that need to be contacted are reduced on the order of 75 percent compared with former methods for obtaining the same information. Off-

setting this advantage in part is the fact that it is necessary to get data by telephone or personal visits when a respondent fails to reply to mail inquiries. The most promising means to minimize respondent fatigue and still meet the rising demands for data is to coordinate all the farm data requirements into a single system of surveys, thereby reducing both contacts and duplication.

#### *Other deficiencies needing attention*

A farm data collection system will need to be reasonably flexible to adjust for the correction of some other arising problems. For about five years the American Farm Economic Association has called for a reconceptualization of the relationship of farms to the economic structure. The principal impetus is to obtain better guidance on what data to collect in anticipation of how they are to be used for analysis and decision making. As progress is made in updating the theoretical framework, it is to be expected that changes will be needed in counting and measuring farms and related phenomena.

One of the more important reasons for this will be to fulfill the needs of the national accounts system, which is preempting the economic statistical field. This relatively recent development concentrated first on other parts of the economy, adapting the agricultural data that were available to its needs. Now that the national accounts system is becoming more sophisticated and precise, it is calling for changes in the agricultural data inputs, necessitating more precise data applying to shorter time periods. The agricultural statistics system will be expected to accommodate these needs. An integrated system able to collect data at appropriate times is most likely to do so.

Similar needs for data at particular times to compare with data from other censuses and other sources are also likely to occur. The Census of Agriculture has always been taken quite independently of other censuses, except at 10-year intervals when the time of data collection is near to that for the population census. Otherwise, the concepts, timing, and administration of the farm census are quite separate and apart.

A problem may arise from the fact that in the origination and 100-year growth of the crop and livestock estimates, the main focus of attention has been on facilitating decision making in the private sector. Crop and livestock estimating is unique in that regard among public statistical services. The national accounts have been tailored more to aid public policy makers and Government administrators. To meld data collection for these diversely motivated systems calls for considerable reconciliation. (9) This problem was in the minds of the Agricultural Economists' Committee, which had faith that new concepts could contribute toward that end. They, more than the general economists and statisticians, are conscious of the vital role federal agricultural statistical services have played in guiding the myriads of independent business decisions affecting our food and fiber supplies. The statistics have exercised the strongest cohesive force in the agricultural economy because they provide a common fund of reliable information on which all segments of American agriculture depends. Society can ill afford to reduce their effectiveness if a competitive economy is to be preserved.

The OMB, sensing some of these problems, began calling for a study of the entire agricultural statistical complex in 1968. Under an OMB directive, the USDA requested in the SRS budget for that fiscal year \$50,000 to finance the inquiry. The request was denied by Congress, but the idea arises in one form or another periodically, usually provoked when additional funds are requested to institute new methods. It is being advocated again at the present time, but plans as yet have not clearly indicated how it is to be financed and performed.

SRS has recognized a need for reconciliation of differing objectives in determining the content and timing of farm data collection. It awaits directions from OMB or some responsible source for overall policy guidance. Meanwhile, it has proposed piecemeal improvements and solicits users' reactions. Acceptable proposals are adopted. Two events give evidence that OMB has institutional goals uppermost in mind.

The proposed "Department Reorganization Plan" announced by President Nixon in 1971 "called for concentrating the major statistical agencies of the Departments of Agriculture, Commerce, and Labor in one principal subdivision of the proposed Department of Economic Affairs." (10) In essence, this centralized statistics agency would be divided into two main functional units—a unified data and planning office, and a centralized, service-oriented data collection and processing center. A reorganization plan was instituted in existing departments by the OMB so that the work organizations would be prepared



for ready transfer to the Department of Economic Affairs when the Departmental Reorganization Plan was approved by Congress, which did not occur.

USDA had very little adjustment to make internally to adhere to the OMB guidelines because it had for many years maintained a segregation between SRS, mainly in collection and processing activities, and ERS engaged primarily in economic analysis. Presumably, placing the work of these agencies into a single agency, which also contained the Bureau of the Census, would circumvent the legal and regulatory requirements preventing the agencies from sharing data. It may be noted that placing the Census of Agriculture and SRS data collection activities together into one agency oriented to concentrate on agricultural statistics is quite consistent with his idea, but it avoids complete centralization of all federal statistical services. SRS has already amply demonstrated its posture of service for other agencies concerned with analytical and administrative work, so the arrangement is not entirely novel.

Nevertheless, from the standpoint of implementing a single agriculturally-oriented statistical unit, the OMB itself becomes a problem. The standard answer is that they want a thorough inquiry into farm statistical services.

The second event, initiated by OMB in furtherance of their objectives, was establishment of a unified statistical budget for the Government. Departments were directed to submit to the Office of Statistical Policy (OSP) of OMB their proposed budget requests for statistical activities. This office then proceeded to amend the amounts that could be requested, specifying increases or cuts by agency and activity for the stated purpose of improving federal statistics. In the first year of operation of the unified statistical budget, OSP claimed responsibility for a 16 percent increase in the statistical budget as a whole. The Department of Agriculture, however, was told to curtail its statistical budget request by \$1 million, later reduced to \$750,000. Evidently, the authorizations taken from the USDA's requests were distributed to other agencies. Two years later when the Administration and the public were concerned about what was going to happen to food prices, the Council of Economic Advisors launched an inquiry into the lack of ability of ERS to forecast these prices during the months and years ahead. The inquiry, by an outside scholar, cited the relationships between budget allowances and the capabilities to do such work, pointing out the status given earlier to agricultural statistical priorities. (11)

The desirability of a closer affinity between the farm census and the economic censuses, especially in terms of the concept of business units, was advocated by American Farm Economic Association's Committee and called to the attention of OSP. The response was the proposal that the Census of Agriculture be postponed and be taken at the same time as the Census of Manufacturers and other economic censuses. This hardly dealt with the crux of the matter, but an integrated system would be more able to accomplish the timing of farm data collection to coincide with such needs than is the case at present. The Census Bureau is asking for legislation to place them together in 1982 for the first time. For years ending in "0" some state or national data wanted in conjunction with the Census of Population could be added in an integrated program.

#### *Potential for satellite data*

Before examining alternative means for acquiring farm data, we take a moment to examine a source of data looming prominently on the horizon. Perhaps the most frequently mentioned contribution of the Landsat (formerly ERTS) satellite to civilian needs is information relating to food supplies, usually involving crop acreages and yields. Although considerable money is being spent—such as the Large Area Crop Inventory Experiment (LACIE)—to demonstrate the possibilities, they must still be regarded as potentially possible. Crude information about the earth's resource inventories and land uses is probably within grasp, but many existing claims for detailed information are still to be classed with unfinished research.

Evidently, the most practical use of the satellite for crop estimates with the present state of the art is to make sampling more efficient. By relating information from the satellite to ground truth, a computer can be trained to stratify land for the purpose of improving the efficiency of collecting agricultural statistical samples.

Up to now, efforts to gain information on crop acreages and yields directly from satellite data, by-passing the use of ground truth, have been fruitless. The possibility sounds dramatic and exciting and has captured the imagination, but

It has also diverted attention away from practical ways of combining the two sources of data to yield better results. The great desire for gaining intelligence on crops without dependence upon information from those who own, control, and till the soil is so great in international affairs today that it has led scientists to exert strenuous efforts to find ways for the satellite to give the answers. Hardware salesmen have fostered these efforts. But desire, no matter how intense, and money, no matter how much, do not in themselves create the means.

No practical way has yet been devised to measure crop acreages by species, to estimate yields, or to count livestock in the absence of ground truth information to check satellite data. Without current data, estimates are likely to be so far off as to be misleading for planning purposes.

Crop yields are of course affected by weather, but the measurement or prediction of yields from only weather data collected by satellite is hazardous, except for gross changes leading to disasters such as major droughts, floods, or freezes. The combinations of moisture and temperature during stages of plant growth are so varied in intensity and duration that these data alone cannot be relied upon to predict yields within reasonably useful ranges of precision. Actually, the measurement or prediction of crop yields from weather data obtained on the ground has never proved reliable in practice for crop estimating.

SRS research indicates means by which satellite data can be useful to improve the efficiency of sampling to obtain more accurate crop estimates. This preliminary research has indicated that gains of up to 50 percent are possible. The research suggests that the coefficient of variation or the standard error can be reduced on the order of one-half from their present size based on ground survey data alone. Current satellite imagery, matched with samples of simultaneous ground truth such as is obtained regularly by SRS enumerative surveys, gives correlations between crop identifications from the two sources that can be applied to vastly larger areas supplied by satellite imagery. This method for improving reliability of an estimate has yet to be proved in an operating mode. If it works out, a smaller number of samples may suffice for probability surveys.

#### *Some questions posed and answers suggested*

Any rationale for continuing the Census of Agriculture is that it will perform different functions than other statistical services. Three functions that the census has performed uniquely among statistical services are: (1) It has supplied demographic data about the farm population, especially in those years ending in "5" when the population census was not taken; (2) It has supplied economic data about farms not included in the current estimates programs; (3) It has supplied county data that can be aggregated into relatively small areas; i.e., areas smaller than states; (4) One variant of this, other than geographic, is that it supplied data in much greater detail than surveys for current estimates. Each of these is discussed in turn below.

(1) At best, demographic data regarding the farm population obtained by the Census of Agriculture was a by-product intended to fill a void. Its capacity for doing this is now seriously circumscribed because of the radical changes that have occurred in the farm structure which has largely separated farm management and ownership from farm residence. (12)

The well-being of farm households could once be measured with data indicating the prosperity of farm enterprises, but correspondence between them has diminished to the point where it is no longer practical to continue such statistical concepts. (6) Farm income data derived from tax sources reveal the degree of noncorrespondence when they show that only 7 percent of the families living on farms in 1971 relied solely on farm self-employment income for family living. Of those relying solely on farm self-employment income, 14 percent resided off the farm; and 31 percent of families residing on farms reported no farm self-employment income. (13) (14). These circumstances suggest that the Census of Population, possibly augmented by current population surveys and by tax data, will be the source of farm demographic data in the future. (12).

(2) Economic data, besides crop and livestock estimates, can be obtained from probability samples, as the SRS has amply demonstrated through the extensive use of the sampling frames for the purposes.

(3) The main difference in acquiring county farm data as contrasted with state and national data is the size of the sample, which will also be influenced by the degree of accuracy sought. In order to attain an accuracy level comparable with that obtained with the incomplete counts of the census, a well-designed 25 percent sample will probably do.



(4) The size of survey designed to acquire county data can be expanded in terms of questions asked as well as in sample-number sufficient to get the additional detail wanted. Some detail now included in the census would not be necessary, since surveys taken at other times to give state and national estimates would not need to be repeated in county surveys.

An aspect of this fourth item is that the census provided much detail useful for research. This is true especially for studies over time revealing trends, and no doubt regular surveys of all types are a productive source of data for research. But researchers emphasize that profile studies probing economic relationships in depth for acquisition of knowledge require microdata with much more detail and precision than is supplied for applications of knowledge through regular statistical services. (15) In fact, the characteristics of data needed for such research calls for special surveys specifically designed for each research project. (16) For agriculture most of these types of surveys are conducted by researchers in land grant universities. Occasionally, data are collected specially for research studies as an adjunct to a regular SRS survey.

These exceptions notwithstanding, census data have been particularly useful for research analysts who could relate the data to other economic phenomena and could trace the data back through previous Censuses of Agriculture to identify and measure long-term trend changes. This advantage is held in low regard by the Department of Commerce, which proposed to arbitrarily break the series of data by postponing scheduled censuses.

Purveyors, manufacturers, and producers of farm equipment, supplies, and services also used the censuses to get detailed purchase, usage, and farm practice data indicative of the market for their products. The Censuses of Agriculture had more requests for these kinds of data, useful to private industry—for example, sales managers devising sales schemes—than it could accommodate given the limits imposed by respondent fatigue in filling out questionnaires. An integrated system could furnish these same kinds of data, subject to the same limitations.

#### *Cooperation with State offices*

One big advantage accruing to the SRS system for collecting farm data is derived from the use of 44 permanent state offices to decentralize the work of conducting inquiries and processing results for all states. In connection with the operation of these offices for current data programs, cooperation with state agencies is established in 48 states to obtain additional or more detailed farm data needed for state programs. Through these voluntary arrangements, state and federal agencies benefit (1) from cost savings by collecting the data for their respective needs at the same time; (2) from reduced respondent burden by collecting their data together, thus avoiding repetitive inquiries; and (3) from assurance of compatible results so that reports issued by the two sets of agencies are consistent with each other.

Unified support received from federal and state officials in urging farmer cooperation is also a boon. Data collected to satisfy state needs are often valuable as check data that would not otherwise be available. Working together improves understanding of the statistical programs and promotes fuller use of data for carrying out the respective public responsibilities as well as by private industry.

But of much greater significance for operating sample surveys, where extreme care must be exercised to make sure all counts and measurements are recorded accurately, is the better opportunity to clear up inconsistencies uncovered by editing of schedules. Located closer to enumerators or respondents who originate the data, inevitable mistakes owing to misunderstanding of questions or other errors can be corrected more easily and promptly.

Probability sampling requires more voluntary cooperation from respondents than the older mail surveys, in the sense that the data has to be obtained from the persons or places selected, whereas before, replies coming from only those willing to reply quickly and regularly were used. Local enumerators plus state and federal officials working together are better able to elicit the cooperation and get the information straight.

This mutually beneficial state-federal system of data collection is already in place and has demonstrated its superiority. It has the capacity for expansion to also collect data for the clientele usually served by the census. The total job could be done much more expeditiously if the inquiries were spread out over a five-year period rather than all collected in one fell swoop every five years. This is true for a number of reasons, of which several will be briefly cited.

### *Fitting samples to quality requirements*

All farm data does not have to be collected in the same detail or with the same standards of quality. Some data are needed only on national bases, some only for state estimates, and still others on localized or county bases. In general, the greater the aggregation of data, the smaller the samples needed to achieve a given accuracy standard. Exceeding the quality necessary is a waste of money. Over a five-year period agricultural statistical surveys could be classified by quality requirements and scheduled by years accordingly. Where national data will suffice, surveys may be scheduled in given years, for state data surveys other years will be used, and only once every five years will it be necessary to increase the size of sample to produce county data. Exceptions could be made for those states and for those items for which particular state or federal agencies are willing to bear the extra costs. It is likely that the county data would be collected for years ending in "2" and "7" to facilitate comparisons with economic censuses for the same years.

Through this type of scheduling all needed farm data could be collected over each five-year period with the accuracy, frequency, and detail of items and geographical coverage fitted to needs. Drawing of samples to spread out the reporting load among respondents or to minimize the chances of one respondent being included in every survey may be arranged. The work of enumeration, processing, and publishing could also be spread out among years and within years to reduce the peaking of workloads. With prospects of steady work more experienced employees may be attracted, for whom more training can be afforded.

Data collection for current surveys could be made to coincide with some collection made for longer term needs. Probability samples would be designed to yield standard errors adjusted to the needs of each survey, and data collected in one could be designed to supplement and reinforce the other. This principal is now practiced in crop estimating; for example, planted acreages of crops are estimated only once for the year. When subsequent monthly surveys of crop yields are made, a small subsample of acreages is checked to see whether adjustments are needed in acreage estimates.

### *Possible cost savings*

Assuming an integrated system of the type described, opportunities for cost savings include:

- Reducing the number of times individual farms need to be contacted to collect data;

- Reducing the size of questionnaires or length of interviews for farm data collection by at least 25 percent—more for items needing only national or state estimates;

- Eliminating the need for two agencies to compile and maintain lists of farmers in the United States identified by size groups, enterprises, and locations;

- Eliminating the printing and distribution of a million census forms that are not used;

- Eliminating the need for a precensus canvass in the effort to identify farms and verify control data;

- Incorporating newly required data into an operating sampling scheme in less time and at less cost;

- Utilizing satellite data more quickly to improve the accuracy of sample estimation. With success, this may be translated into smaller, less expensive samples to get the same accuracy;

- Savings to the economy from greater accuracy. (17)

- Savings involving appropriated funds will be offset in part by increased funds needed to complete the compilation of a list sampling frame started in SRS. An additional \$3 million is required to make it operational for an integrated program.

### *Estimated cost*

The main elements of the agricultural data system with which we are concerned are: \$9.1 million for the Census of Agriculture and \$28.5 million for the crop and livestock estimates, or a total of \$37.6 million annually.

The projected cost for an integrated program giving higher quality statistics covering the same ground in a typical future year is \$36 million.

These estimates make allowance for the cost increases and decreases discussed, except that they exclude statistics collected for state agencies and for

other federal agencies. They also exclude statistical research and clearance activities presently assigned to SRS but not a part of the crop and livestock estimates. None of these exclusions bear on the budget or appropriations for the integrated services. None of these estimates make provisions for inflationary costs.

#### *Administrative alternatives*

Administration of an integrated system may be arranged in any of several alternative ways, as the discussion has suggested. One would be through a general reorganization of government statistical services to accumulate most or all of them in a single administrative unit. An expressed hope of the American Statistical Association and also of blue ribbon committees with a statistical orientation has involved a change of this character, with the head of the statistical work reporting directly to the President. (18) A strong advantage would be to get more balance and uniform quality in statistics throughout the Government. A disadvantage would be the separation of statistics from the programs they support; or rather, conversely, the support of statistics from the program administrators, usually Cabinet officers, and their budgets. This proposal, of particular concern in the case of agriculture, was denied along with most of the Governmental Reorganization Plan of 1971.

Another possibility akin to the first would give the Department of Commerce responsibility for the collection of current agricultural statistics along with the Census of Agriculture. A change in this direction would favor a continuation of the Census of Agriculture in its present form, but with years for collection altered to eventually coincide with the economic censuses.

A third possibility, a reversal of the second, would place the integrated system in the Department of Agriculture. This arrangement would be apropos if the objective to convert the census to a sampling approach is adopted.

Every one of these alternatives would require legislative changes and would involve the transfer of legislative and budgetary responsibility among congressional committees. Administrative responsibilities and appropriations would accordingly be transferred between Cabinet officers pursuant to the legislation. Agricultural statistics have fared well with legislative committees and administrative leadership interested in agricultural policy and have gained professional respect for technical preeminence unequalled at any time or place.

#### *Conclusion*

Given the changes in agriculture and in methods of collection adopted by the Census, it makes no sense to continue the Census of Agriculture. The Statistical Reporting Service, facing the same problems of technological change, has taken positive steps to solve them, thereby increasing the integrity of its public service and reducing the need for the census by presenting a more viable alternative for acquiring needed data. Thus the time has come to halt pandering with farm statistics by assuring that only data released in time to be useful is collected through an integrated system.

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(18) *Report of the Task Force on the Storage of and Access to Government Statistics*, Committee report to the Bureau of the Budget, October 1966. Popularly known as the "Kaysen Report," after Carl Kaysen, Chairman.

Mrs. SCHROEDER. Our next witness is Mr. Paul Feldman, former Deputy Staff Director, President's Commission on Federal Statistics.

#### STATEMENT OF PAUL FELDMAN, FORMER DEPUTY STAFF DIRECTOR, PRESIDENT'S COMMISSION ON FEDERAL STATISTICS

Mr. FELDMAN. I have a statement that I would like to read for the record.

A little over 5 years ago, when the President's Commission on Federal Statistics held its first meeting, it began by reviewing what many earlier commissions and study groups had said about coordinating and organizing the Federal statistical system. What the Commission found in that review had a strong effect on its later investigations and, ultimately determined the nature of its recommendations.

Some of that historical material is relevant to your deliberations, and I'd like to repeat two of the more important points before I go on to the specific topics I've been asked to talk about today.

First, study groups have looked into the organization and coordination of Federal statistics about once every 20 years since 1840. Exactly why these study groups were established is not clear, but it appears that they reflected public discontent about the growing volume of requests or demands by Government agencies for information about commercial and industrial activities. Overlapping requests from a variety of agencies gave the appearance of waste and confusion and, in some cases, imposed serious burdens on respondents. The problems seemed to be most severe after periods of rapid expansion of Government activity, after wars or recessions.

Second, these investigative commissions were sterile. It is particularly noteworthy that they were unable to find any significant examples of wasteful duplication or to argue effectively for reorganization of the system. Typical of their futility was the work of the

Bureau of Efficiency, which reported in 1922 after 3 years of study that it had found only 2 examples of duplication, both of which had been eliminated by the time the Bureau report was issued. Of their 31 specific recommendations for organizational change, none was adopted. In my view, the persistent inability of these earlier study groups to resolve the problems of coordination and organization does not show that those groups were lacking in will; rather, it shows that the problems of the statistical community are not what they are generally thought to be. What is more, there seems to be ample evidence that merely restructuring agencies is not the answer.

Now, I recognize that I cannot make such bold assertions without offering an alternative statement of the problems and suggesting how they can be resolved. The remainder of my testimony today will try to bring both problems and solutions into sharper focus. As you will see, I think the reason the statistics community suffers is not that it commits any misdeeds, but that it is associated with regulatory and investigative agencies that practice statistics badly without knowing it.

To start with, I'd like to point out that most suggestions that the statistical system needs better coordination are based on complaints about the quality of data available on matters of current policy interest or about the burden of meeting Federal demands for information.

Frequently cited examples of poor quality are statistics on such matters as oil reserves, crime, and import prices; examples of burden are the recently proposed line of business survey or the forms that must be filed with the Labor Department in the event of an accident.

Most such complaints, however, have little to do with major statistical agencies, such as the Census Bureau, the Bureau of Labor Statistics, and the National Centers for Health and Education Statistics. Instead, the complaints refer to publications or information demands associated with new, rapidly growing regulatory activities, such as the Labor Department's Occupational Safety and Health Administration, the Environmental Protection Agency, the Federal Energy Administration, the Equal Employment Opportunities Commission, and the Real Estate Settlement Procedures Act.

Not to be ignored, of course, are the reporting requirements of State and local governments, which have grown rapidly over the past 15 years. The dollar costs of reporting as required by these regulatory activities are reputedly immense, although no one has ever been able to measure them very well. I have heard estimates running as high as \$40 billion a year.

Much of this burden is unnecessary and directly related to the failure of regulatory agencies to rely on sound statistical procedures to meet some of their data requirements. Vast quantities of data are gathered, when properly selected samples could yield equally valuable results. Often it is difficult to see even the applicability of the huge amounts of information to the issues being studied. On occasion excessive data requirements appear to have been imposed on the principle that more evidence is always better than less, even when it is clear that the agency does not have a firm idea of what constitutes adequate evidence for decisionmaking.

For example, a study of the Food and Drug Administration found that the staff often lacked the scientific resources needed to evaluate

new drug applications. When that happened, the FDA, after several months' delay, would inform the manufacturer that the application was incomplete and that new material must be submitted, leading to a process of application and reapplication that has stretched on for years.

To avoid such delays, a manufacturer often includes in his initial submission anything he thinks the FDA might possibly request, thereby straining the resources of the FDA further. Most of this paperwork burden is a direct result of failure to set standards for proof and to apply statistical methods in generating and evaluating evidence.

But if the complaints arise from crude statistical practice by regulatory agencies, it seems inappropriate to respond by reorganizing the statistical agencies or by coordinating their data-gathering efforts. Instead, it is the regulatory agencies that ought to be the focus of attention.

This brings me to my second point, which is that for another agency to limit data gathering by regulatory agencies is exceedingly difficult, if not impossible. Quite a few staff members of the Statistical Policy Division of OMB have broken their lances jousting with such old-line regulators as the ICC, CAB, FCC, and FDA, and I suspect that it was with a sigh of relief that the division recently passed responsibility for clearance of their forms to the GAO. The Statistical Policy Division can coordinate data gathering for statistical purposes by asking about a proposed survey: Why do you need this number? Or this size sample? Or in some cases: Why can't you use a similar measure drawn from another survey?

Most often, the statistical policy division achieves its desired effect by persuasion, although, it occasionally relies on its power to deny form clearance. But it has not been very successful in influencing regulatory agencies; they assert, with some justice, that effective regulation is impossible if the regulator can not get adequate information, and who can know what is adequate better than they do. The problem is not unique to the statistical policy division. GAO in its turn will find that it can do little to coordinate this kind of data gathering.

This, of course, is a very unsatisfactory state of affairs. It means that there are few, if any, checks and balances operating to hold down data gathering by regulatory agencies. In addition, it seems that data gathering is not only an outcome of regulation, it is a forerunner of more regulation, so that the burden of reporting keeps growing.

What is needed is some new kind of authority, something to limit the scope of inquiry by the regulators. But that, by definition, would also limit the scope of regulation that Congress set as a goal when it established the regulatory authority in the first place. I can't imagine how any new or existing agency could be given such authority. I do have an alternative to offer: auditing; but I'll put discussion of that off till later.

Another source of continuing trouble for the statistical community is its association with intelligence gatherers in Government and in the private sector. Since both Government statisticians and intelligence gatherers often ask highly personal questions, it is easy to understand why the public tars them all with the same brush and views the



statistical agencies with apprehension. Moreover, since both have found that administrative records of Government agencies are a rich source of data for their various purposes, it is not surprising that people view with alarm the prospect of allowing anyone to have access to such records. If Government is big brother, then, Government statisticians are his agents and not to be trusted. Whether well founded or not, these attitudes affect the ability of the statistical community to do its job.

There have been two major results of this apprehension, one healthy and one unhealthy. The healthy result has been that both Congress and the executive branch have begun to take confidentiality more seriously than they did in the past, when the issue was viewed largely as being in the province of cranks. The unhealthy result, in my view, is that most of the attempts to deal with the subject have gone off in the wrong direction.

The wrong direction I refer to involves attempts to protect privacy by protecting data, rather than individuals, by defining certain classes of information as sensitive and declaring them confidential whenever they appear in Government records. But it is not the data that is sensitive, it is the fact that data can be tied to specific people that is the troublesome issue.

Since any fact about an individual can be sensitive under some circumstances, there is pressure to make all data about individuals completely inaccessible. This has been the thrust of some legislation aimed at restricting the use of social security numbers, for example.

In my view, it would be far better to set up rules that allow the release of data about people as long as their identity is not revealed. I have encountered a number of methods of insuring anonymity, some simple and some quite complicated, and I'm certain that efforts to devise generally acceptable rules would pay off far more than attempts to classify data as sensitive or not.

I don't take as apocalyptic a view of the matter as do many of my colleagues, however. If we do end up restricting the accessibility of data that is already in government files, there will always be the alternative of conducting surveys, although that is a costly way of collecting less information than could be extracted from existing records.

Let me give an example from my own experience. At that Public Research Institute, we used data from Social Security Administration records to evaluate the effectiveness of specific manpower training programs. Earning records of trainees covering 2 years before and 5 years after training were compared with earning records of similar individuals who did not go through training programs. The sample available to us included 50,000 trainees and 24,000 similar workers who did not go through the program. In all, our study cost about \$40,000.

To generate equally valuable data without using administrative records would have required a survey of both trainees and nontrainees with a periodic followup to measure earnings after training. To produce equivalent data by survey would probably have cost about \$1,000 per respondent. Of course, the sample would have been much smaller, but it's hard to believe that the cost of the data alone could have been less than \$1 million. And that data would not have been available for 6 more years.

I don't think that example overdramatizes the issue, although I certainly don't want to give the impression that excluding government statisticians from access to government records would raise costs so high as to drive us into national bankruptcy, or that proper handling of the privacy-confidentiality issue would bring us into a condition of heavenly efficiency. It does look, however, as though it would be worth finding ways to protect individuals, rather than data, so that complete foreclosure of access to administrative records can be avoided.

The last point I'd like to touch on was one of the major points made in the final report of the President's Commission on Federal Statistics; that is, that the term "statistics" means two different things. Statistics are facts and figures, numerical quantities, counts, measurements, averages, ratios, and so forth. In another sense, statistics is a body of methods for obtaining and analyzing data.

The Commission found that most of the problems attributed to the Federal statistical system are traceable to the inadequate attention paid to statistics as a body of methods. They recommended that the use of statistical methods in generating evidence for decisions be brought under the review of a statistical coordinator. The review would involve a thorough, periodic auditing of statistics and statistical practice in the broadest sense, agency by agency.

The Commission declared explicitly that review did not mean control, and I hope that point is not overlooked. The only power the auditor would have would reside in the persuasiveness of his findings and his ability to publish the results of the audit. The power of publication should not be underestimated, however; hardly anything is as effective in improving sloppy performance by anyone—civil servant or anyone else—as derogatory notice in print. An auditor who said "This work reflects incompetence" might prove to be more influential than the President.

I'd like to put the same recommendation before you today because I believe it offers a reasonable hope of improving the performance of the regulatory agencies, thereby doing away with some of the troubles that have afflicted the statistical community. Publishing the results of periodic audits of the statistical practices of an agency, including the questions asked, the sampling design, the aggregation methods, the analysis, and the manner of publication of results, would generate interest in self-improvement in an agency that may have lacked it in the past.

It would not hurt to add protection of confidentiality to the list; this is another area in which past performance has been sloppy.

I believe that this approach would produce a salutary effect. No agency would want to be held up to public ridicule or public complaint about the excessive burden it was imposing, and it would be more likely to take steps to insure that its statistical house was in order.

The Commission recognized that whoever is assigned the responsibility must have adequate resources.

If these hearings are a reflection of continuing complaints about the burden of paperwork, big brotherism, and the low quality of statistical practice in some agencies of Government, I can not think of a better way to attack the problem than to establish an audit capability somewhere and let the auditors get busy.



As I said earlier, I think the problems of the statistical community are not really of their own making. The difficulties arise from the fact that agencies whose responsibility is not primarily statistical often do not perceive themselves as being involved in statistics. As a consequence, they struggle resolutely to avoid modern statistical practice. If I am correct in my assessment of what the problems are, the standard prescriptions will not help; a new approach is called for.

Now, I've covered a lot of ground in this testimony, and I'd like to summarize my main points.

First, the problems of statistics in Government arise from nonstatistical regulatory agencies, not from any weaknesses in organization or coordination on the part of the statistical agencies.

Second, the best way to reduce criticism of the statistical agencies is to improve the performance of the regulatory agencies.

Finally, since strengthening the statistical practices of the regulatory agencies is a thorny problem, an auditing group should be established as an effective way of helping the regulatory agencies to improve themselves.

Mrs. SCHROEDER. Thank you very much; I really enjoyed your paper. You had some new and interesting ideas.

I have always thought that some of the regulatory agencies have gotten so involved in gathering data because of an incredible fear that some day they will be accused of spending money wrong. No one ever accuses you of spending incorrectly if you spend a lot of your money trying to make sure you're spending the money in the right way. That always seems accepted as a safe way to invest your money.

Mr. FELDMAN. I think that's true; I think there is hardly anything more damaging to a bureaucrat than to appear before a budget hearing or a congressional hearing and not know the answer to a question. In order to get the answer to a question, you lay a great burden on the rest of the world making sure that you get all numbers possible, similar to what I've said happened in the case of the FDA in the number of drug applications.

Mrs. SCHROEDER. Bureaucrats always seem afraid to make a specific list of data they want for fear someone will say "Why didn't you think of this?"

Mr. FELDMAN. I think that's true.

Mrs. SCHROEDER. Nobody will accuse you of omission if you put everything in it.

Has there ever been an estimate made of the amount of money spent by these agencies, the nonstatistical ones, gathering statistics versus spending on specific programs? I noticed you mentioned a figure of \$40 billion for data gathering.

Mr. FELDMAN. The \$40 billion is the burden on respondents to respond to the demands of all Government agencies.

Mr. ROUSSELOT. It is the cost of the individual that has responded.

Mr. FELDMAN. That's correct.

Mrs. SCHROEDER. Do we have an estimate of how much tax money has to go into collecting data?

Mr. FELDMAN. I don't have the estimate. I think Joe Duncan, of the Statistical Policy Division of OMB, may have some idea, or if he

doesn't, there is someone around who does. The Commission did not really investigate this; I have no knowledge of it.

Mrs. SCHROEDER. One of the things that you didn't mention in your 3 points was what we do about State and local duplication in data collection. I assume part of the reason is that you figure if we can at least coordinate the Federal Government better, or audit the Federal Government better, it would help.

When we have State and local programs or regulatory agencies, is there any way to make data more available to them so they don't feel they have to duplicate what the Federal agencies ask for?

Mr. FELDMAN. I think the problem with regulatory agencies of any kind is that they have legislated authority and responsibility to regulate. That applies to state and local regulatory agencies as well as Federal regulatory agencies. It's very difficult for them to imagine regulating without having exactly the information they need.

Frankly, I don't believe there is very much that can be done at the Federal level to provide data at the local level.

I think if commissions were established to look into the duplication of information at the Federal, State, and local levels, they would come to the conclusion the President's Commission on Federal statistics came to about the Federal level. There is duplication. I believe that the Hoover Commission said that there is much duplication of jurisdictions in Federal agencies, but not wasteful duplication of data gathering. Each agency asks for the data that it needs and it doesn't duplicate in the pure sense the demands of other agencies.

Similarly, I think the State and local government regulators will duplicate in many details the questions that the Federal Government asks, but they are not duplications that can be done away with.

Mrs. SCHROEDER. So you have 50 forms asking different kinds of questions about essentially the same data?

Mr. FELDMAN. I really don't take heart in the whole thing; I think ultimately what's got to happen is that people either accept the burden of data reporting, or decide it isn't worth the candle to regulate.

I think that at the local level they are probably getting more responsive to the detailed problems of people responding to the State and local regulatory agencies.

Mrs. SCHROEDER. There is hesitancy to rely on another agency's figures.

Mr. FELDMAN. Well, no agency likes to rely on anyone else's figures; they just never believe they are as accurate as theirs, or as appropriate to the questions asked. I, frankly, don't see any external approach that could be taken to reduce the demands. I think it's something that has to be generated internally, which is why I proposed this audit.

Mrs. SCHROEDER. Where would you put this audit? Would you put it in the executive branch, at the congressional level, or would you have it internally in each agency?

It would seem to me that to make it effective it would have to be independent of the agency being audited.

Mr. FELDMAN. Yes; I believe it must be independent of the agencies that would be audited. Frankly, I prefer to see it in the executive branch; I couldn't really make a strong case for it, but I think that the problem that one faces in setting up such a group is that it will run into bureaucratic pressures as the agencies look for ways to be

protected from adverse comment. If the audit agencies are largely independent, the work can be done anywhere. It could be done at GAO; it could be done in the Statistical Policy Division. My preference among those two would be the Statistical Policy Division simply because I am more familiar with it, I guess.

Mrs. SCHROEDER. My fear with it in the executive branch is that if the friendly auditors who exposed some of the things going on in an agency are both appointed by the President there would be incredible problems and conflicts.

Mr. FELDMAN. That is a problem. I don't think there is a perfect solution to this problem of misuse of statistics.

I do believe that the audit agency would control itself, however. It can't go out and make foolish complaints because then it would become discredited. It can't whitewash because the process of publication would expose it to criticism from the private sector, statisticians, and economists.

I think it's a safe institution; I think it would be safe wherever it is. Because there are natural controls on its own behavior, it would do the job, not perfectly, but better than no job at all. That would probably be true if it were in the executive branch or a completely independent agency.

I would like to stress once more the fact that the Commission recommended, and I strongly agree with them, that this audit agency should be given no power to determine what statistical practices can be used. The only power they should have is the power to publish. There isn't anybody who can really second-guess and force another agency to behave in another way without taking responsibility for it. No statistical agency is ever going to take that responsibility. They can't tell the agencies what they must do; they can only complain. I think that means that wherever you put this, you really don't have to have an enormous amount of power; the only power you need is the power to go in and audit.

Mrs. SCHROEDER. And maybe to testify in front of Congress.

Mr. FELDMAN. And to testify in front of Congress.

Mrs. SCHROEDER. Would you also give such a unit power to evaluate some of the bills the Congress has passed with respect to the kinds of statistics to be generated?

Mr. FELDMAN. No; I don't think I would. What I really want to do is to get a group that is going to work on statistics. They shouldn't become another branch of Government; they shouldn't have a lot of additional responsibilities. They should be made responsible for evaluating statistical practice, not to design legislation.

Mrs. SCHROEDER. What about as a warning agency?

Mr. FELDMAN. No; if the Congress feels that they need some such warning agency, perhaps they ought to set one up.

Mrs. SCHROEDER. Mr. Rousset, do you have any questions?

Mr. ROUSSELOT. On your final suggestion on an audit as one of the best ways to achieve better quality and practices and to reduce the regulatory misuse, you mentioned a few; do you really think the General Accounting Office could do it?

Mr. FELDMAN. I don't really have that much familiarity with GAO.

Mr. ROUSSELOT. We keep telling ourselves it's doing a great job; do you think it could do it?

Mr. FELDMAN. I think it would have to staff up to do it; I suspect they do not have the staff that are equipped to handle this job now.

Mr. ROUSSELOT. Part of what they are already doing in auditing practices is to look at the statistical activities of the Government. Maybe they would have to hire some professionals; why would they have to staff up?

Mr. FELDMAN. I think that this is a job for people who are familiar with statistics as a discipline.

Mr. ROUSSELOT. I have got to believe the General Accounting Office has some people who know that.

Mr. FELDMAN. I suppose I have to believe that, too; I have not seen an awful lot of evidence on that.

Mr. ROUSSELOT. Really?

Mr. FELDMAN. You forced me into that statement.

Mr. ROUSSELOT. That's what we're here to find out. It's our arm we're talking about. You don't really think they have enough people.

Mr. FELDMAN. I shouldn't make it that explicit; I don't really know. As I said, I am much more familiar with the people at Statistical Policy Division. I don't think that they have enough people; they would need more.

I really don't know about GAO. The only thing I can say about GAO is that I have seen a lot of its reports, which if I were auditing their activities, I would fault them on statistical practice.

Mr. ROUSSELOT. You would.

Mr. FELDMAN. Yes.

Mr. ROUSSELOT. Well, do you think we should hire a private firm?

Mr. FELDMAN. I think it could be done in the private sector as well, yes.

Mr. ROUSSELOT. In other words, Congress could contract for a private firm.

Mr. FELDMAN. Congress could; the executive branch could.

Mr. ROUSSELOT. I tend to agree with my colleague; I guess I have the same doubts she does, that when you place the auditing responsibility within the executive branch, after a while, the auditing function is apt to be influenced; that possibility exists.

Mr. FELDMAN. Well, it does.

Mr. ROUSSELOT. I have served in the executive branch of Government, so I know.

Mr. FELDMAN. I think that the key element of its placement is that it should be put some place which does not have a line responsibility. OMB is the natural place for that kind of activity because they don't have line responsibility; they don't administer programs per se, and they don't get a vested interest.

Mr. ROUSSELOT. Do you think the OMB could really do an auditing job on this?

Mr. FELDMAN. Yes.

Mr. ROUSSELOT. With the same capability as GAO? Would OMB have to staff-up?

Mr. FELDMAN. OMB has a small staff which, as far as I know, is unable to take on the job now simply because it would be a big job. They would need more people. Wherever you place this, I think would have to staff-up.

When I cite OMB and Statistical Policy Division, I'm saying, again, it's a place where there is no line responsibility, so it doesn't have commitment to bad practices that are there. It could be done outside; it could be an independent agency.

Mr. ROUSSELOT. Do you think there are private firms or research institutions that understand statistics that we could hire to do this?

Mr. FELDMAN. Yes; of course.

Mr. ROUSSELOT. Try it on a contract basis.

Mr. FELDMAN. Yes; I think so.

Mr. ROUSSELOT. That know enough about the Government to know where to go and evaluate statistics?

Mr. FELDMAN. Yes; I think what's more, they are a great deal freer in their ability to go out and staff-up, if they are not properly staffed now.

Mr. ROUSSELOT. If we took the three choices, OMB, General Accounting Office, or a private firm hired by the Congress, you would prefer the private firm. When I say "private," I mean perhaps a statistical division of a college.

Mr. FELDMAN. That's correct. I really can't choose between those 3.

Mr. ROUSSELOT. We can't vote "maybe."

Mr. FELDMAN. You really want me to commit myself?

Mr. ROUSSELOT. Yes.

Mr. FELDMAN. I'd like to see it in the Statistical Policy Division; I don't know why it would be better than the private. I think the privates can do it; I think GAO can do it. For some reason, it seems to me—

Mr. ROUSSELOT. You have a lot of people who have left Government service and gone into the private sectors.

Mr. FELDMAN. I work in a private research firm; I could do it myself as far as that goes.

Mr. ROUSSELOT. You're hired.

Mr. FELDMAN. I think it might be easier to get the necessary cooperation from the agencies themselves if the auditor was part of the Government, and particularly in OMB, which has its own way of enforcement.

Mr. ROUSSELOT. Yes; but then Congress may be suspicious when you get to OMB that they are using this operation to do something else; that's always the big suspicion, not that it always occurs, but there is a tendency to have a natural distrust of OMB here as the knifecutter. I don't think they really knife enough on budgets. But that suspicion exists.

Mr. FELDMAN. On the other hand, there is suspicion among academics about the motivation of research firms. There is suspicion in the executive branch about the congressional branch; everybody is suspicious of everybody else.

I am not an expert in that kind of organizational issue; I really can't tell you where it ought to be.

If you are suspicious of the executive branch, then try it in GAO; if you are suspicious of GAO, as I am, then try it in private.

Mr. ROUSSELOT. I am not that suspicious of GAO; we have, as individual Members, made use of them. Is the quality of statistics in question?

Mr. FELDMAN. I believe so.

Mr. ROUSSELOT. You have made that statement. The issue still concerns the quality of the audit.

Mr. FELDMAN. Then perhaps it ought to be on the outside.

Mr. ROUSSELOT. That's what I'm saying, and people that have had previous Government experience in the statistical field that are in the private sector, wouldn't they be acceptable or considered bona fide or credible?

Mr. FELDMAN. People like Mr. Harry Trelogan certainly would be; I don't think there is any question about that.

Mr. ROUSSELOT. I am fascinated in your second point, that the best way to reduce criticism of statistical agencies is to improve the performance of regulatory agencies as it relates to gathering of statistics.

Have you got some recommendations on this other than what's in your statement, some specific recommendations of the way we could do that?

There is no doubt about the fact that an awful lot of our constituencies are pressed upon to respond to all kinds of statistical agencies and do feel overburdened and excessive costs are imposed on them.

Mr. FELDMAN. I would like to make clear that, in my view, the problem that you hear about is not a problem generated by statistical agencies.

Mr. ROUSSELOT. You said that.

Mr. FELDMAN. I don't think that people who respond voluntarily to agriculture surveys feel they are being overburdened. They must feel it is worth the effort to respond, otherwise, they wouldn't bother. In most cases surveys run by statistical agencies, data gathering activities of statistical agencies, are voluntary, so the burden can't be excessive; the agencies themselves know that, and they limit pretty well what they are willing to ask people because they don't want to get turned down.

What's more, there is an adequate coordination mechanism to make sure it continues that way. That's what the Statistical Policy Division does. I don't think it's the statistical agencies that cause the problem.

Mr. ROUSSELOT. I understand that. Can you give us the specifics about the way to improve the performance of regulatory agencies relating to statistics, aside from the audit. You believe that the audit will expose the bad practices.

Mr. FELDMAN. The audit will expose not only bad practices, but you can only define a bad practice in relation to some alternative which is better. One of the better alternatives is the use of sampling rather than 100 percent reporting which is often required. Another is the establishment of some kind of criteria for evaluation of what evidence is presented, as in the case of the Food and Drug Administration.

The improvement of practices in these regulatory agencies, which I hope would flow from the audit, would be the way of reducing the problem that the statistical agencies have.

Mr. ROUSSELOT. Are you willing to commit yourself to a list of improvements that can be made on the performance of regulatory agencies?

Mr. FELDMAN. Not at the moment; not right now I'm not.

Mr. ROUSSELOT. You made the suggestion.

Mr. FELDMAN. Well, I am partially here recapping what went on at the Commission. The Commission conducted a form of experimental audit in four regulatory agencies.

Mr. ROUSSELOT. Can you tell us which ones they were?

Mr. FELDMAN. Federal Communications Commission, the ICC, the Food and Drug Administration, and I don't remember the fourth.

Mr. ROUSSELOT. OK.

Mr. FELDMAN. The reports, not all of which were published, did make recommendations for changes that could be made in those agencies that would improve their statistical practice. To translate that directly into reduction of burden on the private sector, I think, is an article of faith.

They did come up with opportunities to improve statistical practices; I can't recite those for you. There were two reports included in the backup volume of the Commission report, one of which had to do with sampling being employed in the Federal Communications Commission, and the other one had to do with the Food and Drug Administration. The other two were not published, and I no longer remember what's in them. I'm sure they are available.

What you're asking for, really, is an audit; you're asking for the results of an audit before I am in a position to do it for you.

Mr. ROUSSELOT. No; except you have made the suggestion that the best way to reduce criticism of statistical agencies is to improve the performance of regulatory agencies. You must have some ideas on this. We're not saying that they will be perfect.

That really struck home with me. We would like to improve the performance of regulatory agencies; we deal with them all the time.

Mr. FELDMAN. Partly this is a matter of logic: I am telling you that when you worry about statistical agencies, you're worrying about the wrong thing, because when you go back and look carefully at the complaints that you receive, you don't get complaints about the Bureau of Labor Statistics or the Statistical Reporting Service. What you get is complaints about "This burden is immense, and I have to fill out 29 different forms." If you look at them, they come from regulatory agencies. Yet, every 20 years for the last 140, we have had commissions looking into the statistical agencies trying to figure out how to reduce that burden. It's not the way to go; it must be that the way to go is somewhere else.

I assert to you on the basis of that analysis of complaints that it's the regulatory agencies that you have to worry about. It may be that there isn't any way to really solve the problem. It may be that you're going to have these complaints every 10, 20, or 5 years, and that you can't ever reduce the complaints against the statistical agencies because you can't reduce the burden created by regulation.

Given the way the Commission proceeded, and given what it came up with, I have to accept the proposition that the way to do it is through the regulatory agencies.

Mr. ROUSSELOT. Do you want to follow up?

Mr. TAEUBER. Could the Congress tighten up on the mandates under which the regulatory agencies are operating as they relate to defining objectives or restricting data gathering activities? Should the agencies have more specific targets? Should they have specified objectives?

Mr. FELDMAN. If you're saying the Congress should tighten up on the regulations by saying what they can and can't collect, I don't think you have a prayer. I don't think that that's going to solve the problem.



If you want to tighten up on the regulatories and say, "You may regulate this and may not regulate that," that's a different proposition. The data demands relate to the regulation; the regulation comes from legislated mandates.

Mr. ROUSSELOT. Let's take the FEA. You mentioned that and how it's supposed to be mandated by us to come up with all kinds of statistics on storage facilities, where the oil is under the ground, everything. Do you want to comment on that?

Mr. FELDMAN. Well, the FEA gets hit by complaints and demands by Congress and the outside every day. So, they rush around and try to take care of the complaints to get the heat off. The heat says, "Why don't you know more about import levels? Here were all these ships sitting out in the harbor during the embargo; were we really short on oil or not?"

The only way they are going to find out is by demanding more data. People say, "What are reserves?" We don't know what reserves are so we'll go out and run another survey. It's not a survey; it's a 100-percent sample. They require reports from every person who has storage, I believe, at least 700 firms, the major storage facilities, every one of them.

That comes from the fact that people really want to know the answer. Unless you are willing to say you don't want to know the answer, that the regulator doesn't have to tell us about the import level or the amount of storage or something like that, you're not going to get very far.

Mr. ROUSSELOT. Of course, that was because there was a great suspicion that the oil companies were hiding them in gas lines.

Mr. FELDMAN. That's what happens; that's where a lot of these great demands come from. Something happens and you rush out and start gathering data.

Mr. ROUSSELOT. Sometimes they do things in just response to us; there may not even be a law, we just lean on them heavily.

Mr. FELDMAN. What you're trying to do is tighten up on the regulatories in their data gathering. One thing you can do, instead of demanding a response from every storage facility, is to rely on sample evidence. To do this, you must be willing to trust probability estimates of what the storage quantities are.

But, if you want to tell the agencies how to collect data, and what to collect, you will have to become statisticians yourselves.

Mr. ROUSSELOT. I am very interested in your second comment; I would really like to know more of your specific ideas, because I think you're right; I think your point is well taken.

We can all take individual examples, like the constituents that walk in and say they are part of this monthly economic survey of the Census Bureau and show you a thick thing that they are asked to fill out, and they throw their hands up in horror.

I realize that the Census Bureau has a tough problem of deciding how to do a quality job on economics, that they are demanded to take surveys. It's not an easy task, but the questions asked in there just scare the hell out of some people.

A clear example is Mrs. Grimm. When she was before the subcommittee she kept bringing in all these things sent by the Census Bureau



that scared her constituents; and also incidents when the Federal Reserve Board starts pressing for more information on bank deposits.

Mr. FELDMAN. That's right. A man in my office almost went out of his mind when he heard they had to have his social security number to keep his bank account.

Mr. ROUSSELOT. Some people won't give it.

Mr. FELDMAN. That's right, and some banks won't recognize those accounts either.

When you mention the Census Bureau, I have to say that I think the Census Bureau is the leading agency, and probably if you were to audit the Census Bureau, which I think would be a mistake, you would not find very much to complain about.

Mr. ROUSSELOT. That's reassuring. How do you arrive at that judgment?

Mr. FELDMAN. Just from having been exposed to the Census Bureau over the course of the Commission; they have people who really worry about statistical practice, the quality of the numbers they produce, and the rest. I don't think those are the ones you have to worry about.

Mr. ROUSSELOT. That's good to hear.

Mr. FELDMAN. When Mr. Trelogan was here, he was talking about achieving a 1 percent error. That is evidence that he is really concerned about statistical practices. People in the statistics business worry about the accuracy of their statistics.

Mr. ROUSSELOT. I have taken too long. Just one more question.

We have a committee here that is looking into paperwork.

Mr. FELDMAN. The National Commission on Federal Paperwork?

Mr. ROUSSELOT. Yes. Do you know much about them?

Mr. FELDMAN. Not very much.

Mr. ROUSSELOT. You have not been asked to participate as a member of this Federal Statistics Commission staff?

Mr. FELDMAN. No; I have talked to several people on the staff, but I have not taken any direct part.

Mr. ROUSSELOT. Because this gets into part of it.

Mr. FELDMAN. I guess that's probably true.

Mrs. SCHROEDER. I really do appreciate your being here; I think you have been most helpful.

Mr. FELDMAN. Thank you.

Mrs. SCHROEDER. Thank you. With that, the hearing is adjourned.

[Whereupon, at 11:40 a.m., the hearing was adjourned.]

[The item which follows was submitted for the record by Mr. Feldman, subsequent to his appearance before the subcommittee.]

FEDERAL STATISTICS REPORT OF THE PRESIDENT'S COMMISSION,  
VOLUME 1, 1971

CHAPTER 5—FINDINGS AND RECOMMENDATIONS OF FEDERAL STATISTICAL PROGRAMS

In this chapter we present first the findings and recommendations dealing with the organization and operation of the federal statistical system. Then we consider innovations and new developments. The Commission's findings and recommendations on privacy and confidentiality are treated separately in Chapter 7.

AUDITS AND COORDINATION

To strengthen, monitor, and evaluate statistical programs, the Commission recommends using a single device in several forms—a statistical audit. By

various systematic audits we hope to create a mechanism in the federal statistical system that will continuously review and maintain the quality of statistical activities and of professional personnel. With such a device, both the operating and the statistical agencies will be able to adapt themselves to tomorrow's problems.

#### *Findings*

The process of coordinating the activities of the federal statistical system concentrates too much on collection of general purpose statistics. Coordination also relies too heavily on the review of forms. This reliance has developed because the review of forms provides a convenient control over a large class of statistical programs—those which gather data from respondents.

Two types of activities ought to be subject to review by the statistical coordinator but they are not. They are:

(a) The gathering, processing, and dissemination of data which do not rely primarily upon administration of forms or filling out of questionnaires, i.e., information *about* objects, activities, or individuals. Examples are found in such activities as gathering weather data or counting traffic, and the storage of information and mobilization of data for statistical reports with management information systems;

(b) The use of statistical methods in generating evidence for decisions ranging from routine matters of management, such as maintenance scheduling for government automobiles, to matters of such great public importance as evaluation of the effect of racial segregation in schools on educational outcomes, and whether cyclamates should be withdrawn from the market, or new applications should be approved by the Food and Drug Administration.

Our finding that statistical activities in support of decisionmaking should be reviewed is in no way to be interpreted as a finding that the decisions based on these statistical activities ought to be reviewed or subject to control. Professional statisticians are expert in statistics, not in making the decisions which may rely on statistics.

Nevertheless, we believe that the management of most government programs could be made more efficient if better statistical evidence were offered to managers. Often, to improve the statistical bases for decision-making will require that agencies seek advice from professional statisticians, either on a consulting basis or by addition of permanent staff positions. We believe that statisticians have much to contribute to the process of developing and presenting evidence for they are specialists in inference. Our studies reveal specific opportunities to improve operations by applying statistical methods in the Food and Drug Administration, the Federal Communications Commission, the Interstate Commerce Commission, and the Civil Aeronautics Board. (The first two studies are included in Volume II, Chapter 2.) We have not performed audits of statistical work in other agencies, but we are convinced that similar opportunities can be found in most agencies.

Our finding of opportunities for improved application of statistical practice should not be construed as a finding that all such opportunities deserve to be acted upon. This is a decision to be made by managers familiar with the problems of policy they face and with the limits on their resources. We are convinced, however, that in many cases a statistical audit would disclose opportunities which decision-makers would choose to act upon to improve management.

Statistical audits should cover both statistical agencies and the activities of operating agencies that are now unmonitored by the Statistical Policy Division. Throughout the course of our study, we have been impressed with the fact that users have different demands for accuracy, timeliness, frequency of reporting, comparability of definitions, and detail in widely available statistics. This variety in demand makes it impossible to prescribe standards of quality for producers of statistics, whether they are government agencies or private contractors: application of standards would result in unneeded refinement for some uses, and would simply waste resources.

At the same time, we find that many users and producers are unaware of variations in the quality of statistics that are available. As a consequence, statistics are often misused: validity is attributed to them in some cases where they should be viewed with suspicion, and in others they are viewed with unwarranted suspicion. Statistical audits should recognize these variations in conditions, and point out where improvements could be made under existing conditions.

We find that, in general, too little is known by both producers and users about the sources and extent of error in statistics that are widely available and widely used. It should be routine practice for producers to investigate and publish along with the statistics they produce, or in other readily available form, some analysis of the structure of sampling and non-sampling errors in the data. Statistics are not all of equal importance. Expenditures on the study and documentation of error should not be the same for all statistical programs or take a fixed proportion of expenditures on each program. What is appropriate can be determined only in a program-by-program review. Audits of statistical producers should, among other things, be concerned with the matter of quality and documentation. Producers who satisfy their primary users but who do not provide documentation of quality for others do all users, and themselves, a disservice. Studies of error may frequently show producers how to improve their statistics without substantial increase in cost, and it is always desirable to achieve better quality for the same expenditure.

Improvements in quality or reduction in cost will flow from development and adoption of innovations in methodology. While we have noted that our system has led the world in the past, we also note that bureaucracy does not reward successful innovators as much as it penalizes those who are unsuccessful. Innovations are developed and adopted more slowly, we believe, than a careful assessment of costs and benefits would indicate to be desirable. Again, we suggest that experimentation with, and adoption of, new techniques of collection, processing, and dissemination would be fostered by statistical audits that would show where practices could be improved.

Performance of statistical audits should not be left to commissions such as ours which seem to be called into being about every twenty years. If a statistical audit is to be successful, it should be fairly frequent, and recommendations for the application of statistical methods should be changed as the underlying problems and activities of agencies change. Such a recurrent process, reaching all agencies over a period of time and covering a vast range of subjects and specialties, should also not be left to amateurs or individuals unfamiliar with government and its peculiar problems. Highly qualified and experienced professional statisticians with a well-developed understanding of the practice and fundamentals of statistics and the possibilities of statistical techniques, will learn how much knowledge of subject-matter must be gained in order to identify operational statistical problems and will be able to offer practical suggestions for improved application of statistical methods.

#### *Recommendations*

On the basis of these findings, we recommend that:

The Statistical Policy Division in the Office of Management and Budget should be expanded to allow an audit of the statistical activities of all agencies at appropriate intervals, including the gathering of data by means other than forms, the application of statistical methods in preparation of evidence for decision-making by managers and policy makers, and the full documentation of total error in statistics made available to other users.

In performing these audits, the Statistical Policy Division should maintain a close and cooperative relationship with the staff of the agency.

The results of audits and the recommendations for improved statistical practice should be made available to responsible officials in the agency being audited, and should also be published in a statistical journal available to professional statisticians.



## COORDINATION OF STATISTICS

THURSDAY, FEBRUARY 26, 1976

U.S. HOUSE OF REPRESENTATIVES,  
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,  
SUBCOMMITTEE ON CENSUS AND POPULATION,  
*Washington, D.C.*

The subcommittee met at 10 a.m. in room 304, Cannon House Office Building, Hon. Patricia Schroeder (chairwoman of the subcommittee) presiding.

Mrs. SCHROEDER. Good morning.

Our first witness is Dr. John Stiglmeier. Welcome to the subcommittee and we are delighted to hear what you have to say.

### STATEMENT OF DR. JOHN STIGLMEIER, DIRECTOR, INFORMATION CENTER ON EDUCATION, EDUCATION DEPARTMENT, NEW YORK STATE

Dr. STIGLMEIER. Thank you. As you just informed everyone, I am John Stiglmeier, director of the Information Center on Education in the New York State Education Department. In that capacity I have responsibility for the coordination of all data collection procedures within the education department as well as the identification, implementation, and operation of data systems in all areas of education, elementary, secondary, and postsecondary, public and private.

I have also served, since 1963, as the New York State representative to the Council of Chief State School Officers' Committee on Educational Data Systems and its current successor, the Committee on Evaluation and Information Systems. Through my work in New York State and with the Council of Chief State School Officers, I have had the opportunity to observe, first hand, the development and growth of Federal reporting requirements placed on State and local education agencies.

At the outset I want to assure you that we are well aware of the need to have valid, reliable, and timely data to monitor, evaluate, and plan this Nation's vast educational enterprise. The need for such information is common among all levels of government, Federal, State, and local. At the same time, however, we have a concern over a Federal reporting burden that seems to grow unabated.

We are concerned that, outside of statements concerning legal mandates, there is too often no detailed justification for the vast amount of data collected and no plan for how the data, once collected, will be used.

We are concerned that, in general, too little thought is given to the cost of collecting data and the burden such activities place on local education agencies.

We are concerned over the effect that new, uncoordinated data collection activities have on State education agency efforts to implement their own streamlined information systems.

We are concerned over the matter of congressional intent when certain studies and reporting requirements are specified in the law vis-a-vis those reporting requirements defined by agency and program administrators. In the same vein, we are concerned over the apparent lack of attention given by Congress with regard to the data burden and attendant costs caused by mandated studies.

Finally, we are concerned over the general lack of control of Federal reporting in education.

In 1975 the Comptroller General of the United States issued a report to the Congress entitled: "Data Reporting Requirements for State and Local Education Agencies." The report states that in fiscal year 1973, the Office of Education alone collected 43.4 million data items requiring the expenditure of some 2.2 million hours of staff time on the part of respondents. The report further identified two primary causes of paperwork problems; namely, excessive detail and redundant information requests.

In order to amplify these points, I would like to cite some examples of activities and events which bear on the problem.

As you are aware, Public Law 93-380 mandated 22 separate studies in many areas of education. One of these studies concerning crime in the schools was mandated under section 825. As a result of the legislation, two studies were planned, one by the National Center for Education Statistics and one by the National Institute of Education.

The NCEES safe school study was conducted among a sample of school districts in March 1975 and sought the number of offenses reported to police authorities between the opening of school in the fall of 1974 and January 31, 1975.

The NIE safe school study is being conducted at the present time and will run through January 1977. In that study a nationwide random sample of schools will be asked to maintain a 1-month log of all incidents that occurred in the school during that period of time. In addition, a sample of teachers and students will be surveyed concerning their experience with school crime.

As a result of this legislation, then, two wide ranging somewhat duplicative surveys have been or are now being conducted, both of which place a large reporting burden on the schools. It is interesting to note that section 825 states: "The Secretary may reimburse each State educational agency for the amount of expenses incurred by it in meeting the request of the Secretary under this section." To date, no money has been forthcoming to either State or local education agencies for this purpose since, we understand, none was ever appropriated.

It is also interesting to note that in 1975 the Subcommittee to Investigate Juvenile Delinquency of the Committee on the Judiciary of the U.S. Senate issued a report entitled: "Our Nation's Schools—A Report Card: 'A' in School Violence and Vandalism." Data for that report were also secured from public school districts most of which

are in one or both of the other two studies. It would seem that three surveys in 2 years on the same subject is itself a crime.

In 1974 the Select Committee on Education of the U.S. House of Representatives asked the Commissioner of Education for a special survey and study to estimate excess costs of educating handicapped children. A study to assess the availability of appropriate data was undertaken in nine State education agencies by the National Center for Education Statistics. The major finding of the study was "that only part of the data sought on the numbers and costs of educating handicapped pupils could be provided by any of the nine surveyed States. Much of the information provided was estimated rather than verifiable data, and the data provided were not comparable from State to State. Therefore, it is not possible with existing data in SEA's to make a national estimate of excess cost of educating handicapped children."

In the face of this report, the Bureau of Education for the Handicapped has defined its data request for each State's annual program plan, mandated under part B, Education of the Handicapped Act, as amended by Public Law 93-380, in a form virtually identical to that used in the conduct of the NCES study. The request is justified on the basis that it is responding to a clear intent of Congress. Further, the recently enacted Handicapped Education Act (Public Law 94-142) is even more prescriptive in its request for data on the handicapped; data which have already been determined to be not available.

It is clear that more definitive data are needed on programs for handicapped children. At the same time, there must be a realization that certain kinds of information are inordinately expensive, for example, on specific program costs, and to make them available at the local level from which they originate will require massive infusions of money. In the absence of such assistance, local and State agencies are put in the position of having to fabricate numbers in order to receive basic grants.

Prior to 1971 the New York State Education Department worked cooperatively with the Office for Civil Rights in securing information from New York State school districts required for the OCR compliance report. In essence, we filed the report for each district in machine readable form, securing the data through our own information system. The most obvious advantage to that arrangement rested on the fact that it produced a reduction in the already extensive burden of Federal and State reporting that school districts continue to bear.

In addition, the system of centralized reporting improved the accuracy and timeliness of the data reported to OCR. In 1971 and in subsequent years, the Office for Civil Rights so expanded their reporting requirements that we were unable to modify our own information system to secure the required data. Aside from real questions concerning the usefulness and validity of data collected by OCR, the response burden imposed by that office on local school districts has grown inordinately large over the years.

It has always been our position that OCR should require from all school districts only the minimum amount of pupil and staff data necessary to identify units where ethnic segregation appears to be a problem. Additional definitive categories of data should be collected only from schools and districts so identified.



It might be noted that for the 1975-76 school year, the OCR burden is doubly onerous in that they are requiring districts to fill out compliance reports but will not collect them. We can find no justification for this request except in districts where the Office for Civil Rights can reasonably expect to undertake a compliance review in the very near future.

The New York State Education Department holds a similar position with regard to the massive data collection activities of the Equal Employment Opportunity Commission. EEOC currently requests on a school building level a distribution by race within sex of 28 categories of professional and nonprofessional staff. In the fact of such a large data request, we have asked EEOC how data obtained would be used in determining noncompliance. In response to that question, we were informed that it is not the practice of EEOC to issue guidelines on the uses of data obtained through its surveys.

Another recent case—and I might say very probably the most outlandish I have ever encountered—of excessive burden, failure to provide justification for survey activity and impact on State level information systems is found in the Higher Education General Information Survey, known as HEGIS, conducted by the National Center for Education Statistics. In 1966 the New York State Education Department stopped sending its own data collection instruments to colleges and universities and agreed to use HEGIS form and coordinate their collection for NCES. Again, the purpose for entering into this cooperative relationship was to reduce the burden on the supplier of data. Since that time the survey has grown larger and more complex, forcing us to reexamine our coordinating role and thoroughly examine what minimum data we actually need. It appears that we may well be able to get along with only about 100 basic data items from our colleges and universities compared to the thousands now collected in HEGIS.

It is now proposed for the 1976-77 academic year that the data requirements of the Office for Civil Rights be collected through HEGIS on two forms: Fall Enrollment and Degrees Conferred. We prepared an estimate, which you have, of the potential number of cells of data that could flow into Washington from the colleges and universities of New York State and the United States on these two forms alone. The estimate shows that number to be nearly 6 million for New York State and nearly 84½ million for the United States.

We are mindful of the general legal mandate for data collection under the Civil Rights Act, but it is beyond our comprehension how anyone could possibly analyze or use such an enormous amount of information. There is, obviously, a question of data validity when one attempts to collect this type of information. Let me elaborate on that.

In elementary and secondary schools, you generally have a self-contained unit, so somebody can look at the people and say, "That person is black," or from an ethnic category. In large universities that's not possible. So the only real way to get at racial ethnic data is to do a self-reporting survey.

I will give you a recent example of what happened at City University of New York. They have been doing it for a number of years.

The last year they did the self-reporting survey, they got a response of 47 percent. So 53 percent didn't put anything down.

Now, we know there is a bias; we know its intensity, but we don't know its direction. However, the Federal Government requires the information, so the City University of New York takes the 47 percent distribution and extrapolates it across the total population; and it's meaningless.

More importantly, however, in light of current fiscal and personnel austerity in all sectors of the educational enterprise, such a request combined with the six other HEGIS forms places a reporting burden on the colleges and universities of the Nation that is unconscionable.

These then are a few of the horror stories concerned with Federal data collection with which I am familiar. There are others outside of the Education Division including: the Departments of Agriculture, Labor, and Transportation, the Social Security Administration, and the Bureau of the Census.

In the 13 years that I have been working in this area, I have never been more discouraged. The situation is out of hand, and while attempts are made to effect some control, nothing seems to work. But something must be done beyond the patchwork approach that has been used in the past.

I recommend that one agency in the Federal establishment be given responsibility for coordination of all educationally related data collected from State and local education agencies as well as postsecondary institutions. By definition, the National Center for Education Statistics has that responsibility; now they should be given the authority to act.

The agencies themselves must do more to lighten the data burden in the field and not wait for watchdogs to do it for them. Agency heads must be made aware of the gravity of the current situation and demand from their program officers more adequate justification for all data collection and evaluation activities. Such justifications should be based on the uses to be made of information as they relate to policy issues or absolute statutory requirements. The common phrase found in much legislation: "—Or whatever information the Secretary may require—," simply opens a Pandora's box.

Finally, I recommend that the Congress set up an internal mechanism for studying the data impact that proposed legislation will have on the ultimate suppliers of information. The present Federal requirements for environmental impact studies might well serve as an appropriate model. Such studies must deal with absolute burden, availability, and cost to the supplier. Where cost is found to be an important factor, the Congress must not merely authorize the expenditure of funds, but specifically appropriate them. The Congress should also utilize the expertise and knowledge available from State and local education agencies and postsecondary institutions. The Council of Chief State School Officers can serve as an appropriate vehicle for that interface.

Thank you.

Mrs. SCHROEDER. Thank you very much. I wish I could say we were hearing better things, but it sounds like we're all going in the same direction with the frustration.

You went into great detail on the HEGIS program; do you find any cooperation at all from Federal officials? You expressed your frustration at the State level.

Dr. STIGLMEIER. Yes; there is cooperation many times. The specific survey that you are speaking about, I'll have to answer no, we do not; we have received no justification for what they are doing and we just don't think all the data they collect are needed.

Mrs. SCHROEDER. When you explained the trouble you had at the City College in New York, and how the data really are not good; is this happening at other places too?

Dr. STIGLMEIER. Correct.

Mrs. SCHROEDER. What is the response?

Dr. STIGLMEIER. There is none. The Commissioner of Education in New York State has written I don't know, four, five, six letters, specifically to the Office for Civil Rights, on these very points, in elementary, secondary, and higher education, and there has literally been no response.

Mrs. SCHROEDER. What happens if you don't turn it in?

Dr. STIGLMEIER. Well, it isn't the State agency that has responsibility for turning in the report; it's the local education agency or college or university. They are bound by law; very specifically it's called a compliance report, and they have to turn one in.

Mrs. SCHROEDER. Or they lose their funds.

Dr. STIGLMEIER. That's correct, it's not just education funds, if I am not mistaken, the city of New York was threatened with a cutoff of all Federal aid.

Mrs. SCHROEDER. Congressman Neal, do you have any questions?

Mr. NEAL. I don't have any questions.

Mrs. SCHROEDER. Counsel?

Mr. TAEUBER. You implied that New York State is trying at least to provide a State data system to help the local schools and the State universities; are other States moving in this direction?

Dr. STIGLMEIER. Yes; they are; many States are trying to develop their own information systems.

Mr. TAEUBER. To what extent is this being supported by Washington?

Dr. STIGLMEIER. The concept is supported by Washington; there is no money. I think on the part of a number of people, it's highly supported; in fact, the National Center for Education Statistics is trying to do the very same thing in developing what they call a common core of data. The first phase has been implemented, but it's difficult to keep up.

Mr. TAEUBER. Are all the data under the control of NCES?

Dr. STIGLMEIER. At the present time. Of course, I mentioned the Office for Civil Rights, which is under the Assistant Secretary for Education. The control should be, as I indicated, and I feel very strongly, that somebody has to have the authority to demand justification and absolutely say: "No; it doesn't go out."

Really, I can only repeat this: What would anybody do with 84 million cells of data.

Mr. NEAL. What happens is they pass a law and turn it over to the bureaucracy to implement, and the bureaucracy makes those decisions of the information that they need to implement the law.

Mrs. SCHROEDER. It goes on and on.

Dr. STIGLMEIER. To me it's some sort of a dilemma, whether or not the Congress should be very specific and prescriptive in the information that's required under a law, or whether they should make a blanket statement: "whatever the Secretary may require." If the Congress itself were to do the impact studies and do them well, I think I would really opt for the prescription in law; that's if a good study is done.

This handicap bill is a perfect example. There was, to my knowledge, very little input from local education agencies outside of the study that I quoted that said the data aren't there. Yet, it's going to cost money.

Mr. TAEUBER. Presumably there are review mechanisms within the bureaucracy that have authority or control.

Dr. STIGLMEIER. Yes; but they have not been effective.

Mrs. SCHROEDER. Do you have any estimate on the cost to people who are having to fill out all of the data on education in New York?

Dr. STIGLMEIER. No, ma'am, I do not.

Mrs. SCHROEDER. Thank you so much; you really were very helpful. [The following tabulation was attached to the prepared statement of Dr. Stiglmeier.]

CALCULATION OF POTENTIAL NUMBER OF DATA ITEMS IN  
PROPOSED HEGIS FORMS OE2300-2.3 AND OE2300-2.1

OE2300-2.3Fall Enrollment and Compliance Report of Institutions of Higher Education, 1976New York State

Number of lines (29) x Number of columns (16) x  
Number of programs (29) x Number of Institutions (252) =  
3,390,912

United States

Number of lines (29) x Number of columns (16) x  
Number of programs (29) x Number of Institutions (3,038) =  
40,879,328

OE2300-2.1Degrees and Other Formal Awards Conferred Between July 1, 1975 and June 30, 1976\*New York State

Bachelor's/Master's/Doctorate	-	Number of lines (1,998) x Number of columns (6) x Number of Institutions (168) = 2,013,984
Degrees Based on Less Than 4 Years	-	Number of lines (510) x Number of columns (10) x Number of Institutions (84) = 428,400
Total New York State	-	2,442,384

United States

Bachelor's/Master's/Doctorate	-	Number of lines (1,998) x Number of columns (10) x Number of Institutions (1,887) = 37,702,260
Degrees Based on Less Than 4 Years	-	Number of lines (510) x Number of columns (10) x Number of Institutions (1,151) = 5,870,100
Total United States	-	43,572,360

TOTAL BOTH FORMS

New York State	5,833,296
United States	84,451,688

\*Calculation excludes First-Professional Degrees

Mrs. SCHROEDER. We welcome our panel, Dr. Eckler, Mrs. Gilford, and Dr. Woolsey.

I understand that Dr. Eckler is going to lead off with the first presentation.

**STATEMENT OF DR. A. ROSS ECKLER, FORMER DIRECTOR, BUREAU OF THE CENSUS**

Dr. ECKLER. Thank you. I have a few notes I want to cover; first will be my own personal background.

Prior to my retirement, I was Director of the Census, from 1965 to 1969. Before that for 17 years, I was Deputy Director of the Census. Consequently, my contacts with this committee have been very numerous over the years.

I recall very well the extensive work we had with Chairman Green when we were working on an earlier version of the mid-decade census. I think we had a high water mark when the bill passed the House and was ready for action by the Senate, but it stopped there. I watched its progress with much interest.

Also, I had a good deal of contact with Chairman Wilson during the time of the so-called Betts controversy, about very restrictive provisions of the 1970 census, which would definitely have lowered the quality and completeness of that operation.

So, it's like coming home coming back to this room; I am happy to have a chance to do so.

I will take a moment to say something about the importance of statistics; they are of tremendous importance. I'm sure you are well aware of that. So many of the decisions that are made in Government, so many of the decisions about business, depend on the statistical output of the Federal system. Hence, it's a very rewarding area in which to work, and I am sure that you and the committee feel that's the case.

It's vital for much of our legislation as we heard in connection with these mandated surveys. Much of the action of Congress depends upon availability of statistical information, either what's already collected, or that which is specifically collected for the purpose.

I would like to say that I welcome the emphasis that you're placing upon the planning and coordination of statistical work in the executive branch, in the Office of Management and Budget, and individual agencies.

Statistics require an extensive time for planning; the leadtime is very great, not always so great as for the census, but for any good survey, there is a good deal of leadtime involved. There are important interagency relationships that have to be taken into account; this requires planning.

It's somewhat increased at the present time, and has been for some years because of concern over privacy and confidentiality. Of course, the planning has to be in terms of changing needs for Federal statistics and changing opportunities for utilizing administrative records and other sources of information.

Fortunately, the cost of statistical work relative to the total volume of operations is not inordinately great. Budgets are sizable when you put them all together, but in terms of aggregate operations, the amount involved is relatively small.

I would like also to say something about the need for coordination and for the operation of the Office of Management and Budget to take care of some of these difficulties.

Over my period of experience, I had contracts with the various officers of the Central Statistical Board and its successors, now the Statistical Policy Division, for some 30 years. I have been struck over that time by the fact that this office has progressively lost size, lost ability to carry out its function.

Very early, even before it became a part of the Bureau of the Budget, it took responsibility for clearance, for standards, and for planning. Then when it became a part of the Bureau of the Budget, around 1940, it acquired responsibility for budget overview, which, of course, added considerably to its work and also to its effectiveness.

Over that time the office staff has substantially declined. It's probably a little under 30 at the present time, about half the size it was 30 years ago.

That is a paradoxical situation because at the same time the load which this office has had to carry has increased enormously. It would be difficult to get an exact measurement of the increase in size of the statistical work because real dollars are not the same as the budgeted dollars. I venture to say it's well over 100 percent higher. At the same time that the staff has been declining, the load has been increasing.

Furthermore, the complexity has increased. There has been a much greater use of administrative records over this time, which involves complications. It's sometimes simpler to set up a survey, even though it's more expensive, than it is to try to use administrative records; the latter requires more planning and coordination.

There have been other developments; new statistical systems have been built up in Health, Education, and Crime; great expansions have taken place. You could go across the board to indicate the increase in the load of this office.

I think some difficulties have arisen, some difficulties that the Census Bureau encountered, which could be attributed to the lack of sufficient staff. For example, in the mid-decade census discussion, I think if the Office of Statistical Standards, which it was called at that time, had had sufficient staff, there would have been a more favorable view toward the mid-decade census.

We have had frequent changes of direction. We had certain things added one year, and the next year other things would be added without any warning. There wasn't enough planning ahead. I think if the coordinators office had more adequate staff, it would be possible to do a better job.

The question has arisen as to how you're going to get the resources there. I hope that this committee may address itself to finding some procedure. It's true that the Office of Statistical Standards, now the Statistical Policy Division, part of the Office of Management and Budget, has a tradition for setting a good example to the rest of the Government. This budget is normally restricted somewhat.

I venture to say that there might be some sort of new device or method of procedure. There is, for example, an Office of Federal Procurement Policy, which is in the Office of Management and Budget, as I understand it, and has a responsibility to the Congress as well



as to the executive branch, and the financing and staffing of that are to some extent influenced by congressional pressure. Whether this would be a possibility for statistical work, I don't know. I think we do need to have added strength.

I have taken more time than I should. Thank you.

Mrs. SCHROEDER. Thank you very much.

Next we'll hear from Mr. Woolsey.

**STATEMENT OF THEODORE WOOLSEY, FORMER DIRECTOR,  
NATIONAL CENTER FOR HEALTH STATISTICS**

Mr. WOOLSEY. Thank you, Madam Chairman.

My name is Theodore Woolsey; I am presently a self-employed health statistics consultant, and I have worked in the field of health statistics for 35 years, mostly in the Federal Government.

My last post in the Federal Government was that of Director of the National Center for Health Statistics in the Public Health Service. I was director from 1967 until 1973. Before that I had been Deputy Director of the Center for some years, and I was in on its establishment in 1960.

Earlier I assisted in the writing of the National Health Survey Act, passed in 1956, which got us started on the programs of health surveys and other activities to measure the health of the people of the country, health services, and health resources, and so forth.

I am flattered to be asked to give my views on the problems of organization and coordination of the Federal statistical system and also pleased at the opportunity because of my pride in having been a part of it, and my concern for its improvement. That concern has continued since I left the Government.

Furthermore, I must say I think it's a good idea to tap the experience of people who have had positions of responsibility and are familiar with the problem, but who are no longer obliged to pull their punches and adhere to some administration position. I think your subcommittee will get much frank and useful testimony this way.

I am going to devote my statement to a problem which I think pervades the whole of the Federal statistical system and hampers its managers from doing the best job they know how I think it lowers the quality and increases the cost of statistical work, and furthermore, it's just bad administrative practice.

This is the problem of ceilings on the numbers of positions that can be filled. Every manager worth his salt knows that he must live within constraints regarding resources. Those constraints, which are embodied in budget authorizations, are proposed by the executive branch, reviewed by Congress, and eventually made law by appropriation acts. They reflect the compromising and competition of priorities that they should reflect, and both the executive and legislative branches participate.

A statistician manager may be disappointed in how he or she comes out in this competition, but at least he should feel he has had a chance to make his case, and he should be willing to do the best he can with the dollar resources he is given.

But these personnel ceilings are another thing entirely. In the first place, Congress, as far as I can see, has very little influence on them. In

the second place, they bear only a coincidental relationship to the programmatic priorities reflected in the budget. They are established for the various departments by OMB and then divided up among the bureaus and the programs. Thus, the statistical manager finds an independent constraint, not particularly consistent either with the statistical program responsibilities he has been given, or even with the money in its budget.

These ceilings apply to both permanent full time positions and temporary positions. The latter is important to remember because it often limits the statistical agencies from taking on survey jobs from other parts of the same department or the Government.

For example, if NIH needs to have a survey conducted and has the money to pay for it, there is no possibility for the National Center for Health Statistics to undertake it for them, unless NIH can lend position vacancies as well as transfer the funds. NIH can't do that because it has its own tight ceiling; so, the job goes to private contractors.

I have no objection to private contractors. In fact, the one I do a good deal of consulting for does a fine job. But I just think that the major Federal statistical agencies do a better job, and contracting out this work weakens those agencies.

Furthermore, a statistician manager is often at his wits end about how to accomplish the kinds of continuing data collection and analysis that he should be doing with his full time permanent people, when he is forbidden to hire beyond the ridiculously arbitrary limits. It is often not a question of having funds to pay for staff, but rather not being allowed to hire them.

To give a simple example, the National Center for Health Statistics had an authorized ceiling of 569 full time permanent people as of June 30, 1972. For June 30, 1976, they are supposed to be down to 536, up slightly from last year's 504, and this is despite vastly increased responsibilities assigned to the Center and increased funding that pretty well matches the responsibilities.

I might mention here that one of those major responsibilities that the Center is undertaking relates to this matter of collection of data through State and local areas. The principle program priority within NCHS in recent years is the so-called Cooperative Federal, State, Local Health Statistics System, in which all parties are working together to come up with minimum data sets and means by which the statistics can be reported just once and used at all levels of government, including the Federal Government, and thereby eliminating a great deal of duplication of effort, and making the data more current.

That has been one of their principle program priorities, and it's something that's been supported by OMB and the Congress. Yet, the numbers of people they have to help work on this have been reduced during this period.

I just don't see why the manager cannot be given the freedom to use the appropriated funds the best he knows how to accomplish the planned goals.

Furthermore, I think he should be able to use reimbursed funds to hire temporary staff to take on the statistical tasks which other agencies with fewer statistical skills need to have done for them.

Keeping down the numbers of people on the Federal payroll, independent of authorized appropriations, is a strictly political strategy

which does a disservice to Federal statistics and hampers good management.

I believe it originated with efforts to keep Federal Government out of business that should be carried on by industry, but it is now applied with little or no real assessment of its effect upon the various functions of the Government.

Statistical fact finding is a basic function of government which I am convinced helps to improve programmatic decisionmaking and the framing of new legislation.

Hence, there is no rational basis for insisting on limiting the numbers of people working on this function other than by a priority setting reflected in the appropriation process.

Thank you.

Mrs. SCHROEDER. Thank you very much.

Next we will hear from Mrs. Gilford.

Mrs. GILFORD. Thank you, Madam Chairwoman.

#### STATEMENT OF DOROTHY M. GILFORD, FORMER DIRECTOR, NATIONAL CENTER FOR EDUCATION STATISTICS

Mrs. GILFORD. I am pleased to have your invitation to present my views on coordination and planning within the Federal statistical system. My views stem from 27 years experience in 4 different agencies, the most recent being as the Director of the National Center for Education Statistics for the 6-year period 1968 to 1974.

Your letter expressed interest in the problems which arise from direct legislative mandates or executive branch program office reaction to performance reporting requirements.

Legislative mandates can create problems for statistical agencies, problems which could be avoided by more interaction between the congressional staff drafting the legislation and the statistical agencies and/or by having a group of statistical experts available to review the proposed legislation.

The problems which a statistical agency can encounter in implementing a mandated study include: Ambiguity in the wording of the legislation where the interpretation of the legislation by the general counsel of the agency is different from the intent of the Congress; time deadlines which are not realistic when form design, pretesting of the form, forms clearance by the Office of Management and Budget, coordination with the respondent group, actual survey time and data processing time are considered; requests for data which cannot be collected accurately because records do not exist or because it is not in the best interest of the respondent to provide the data; a mandate to carry out a study requiring expertise not currently in the agency, expertise which may be the specialty of another agency; and disruption of the existing program of the agency; this is especially severe if several studies are mandated to an agency at one time.

Even if the agency requests additional positions for the mandated activity, it may require over 1 year to go through the budgetary process, establish the positions, and recruit staff. During the year either ongoing projects must be aborted which can create ill will on the part of respondents or the projects are continued with an inadequate number of staff and there is serious delay in publication of data

which in turn creates future response problems. The overall effect is bad for morale, for staff members feel that no matter how hard they work, they cannot meet the demands of the mandated study or studies and maintain the ongoing time series and the essential good will of the respondents.

The requirements of executive branch program offices for performance reporting also create problems for the statistical agency which collects general purpose statistics. These problems can be quite severe if the agency has a large number of programs, and if the organizations or individuals responding to the requests for program data are the same as those who provide the general purpose statistics. When the total response burden on an individual becomes too great, he will refuse to cooperate, and it is frequently the request for general purpose statistics which suffers.

The appropriate balance between response burden stemming from program data requests and from general purpose statistical requests should receive the careful attention of the head of the agency. Detailed and time consuming staff work would be required to determine the utility, costs, and benefits of various types of program data and general purpose data. The head of an agency needs this information to determine a rational data collection plan for an agency.

Parenthetically I might remark that development of this type of information was started at NCES. We took the first step which was to develop a list of all of the surveys which were conducted by the Division of Education, but we didn't have enough staff to carry out the detailed review of forms and obtain a justification for all of the items which were on the forms.

There are two additional issues which warrant consideration.

The Privacy Act of 1974 has imposed serious limitations on certain types of activities of statistical agencies. It would be desirable to review the impact of this legislation on statistical agencies and on the field of social science research to determine whether some modifications in the act are desirable for statistical agencies.

Finally, I would like to recommend broadening the definition of the Federal statistical system to go beyond surveys and to include all Federal statistical activities, for example, statistical quality control of procured material or products, experimental design and reliability modeling. There are huge investments of Federal funds in these areas and great savings to be made. The Division of Statistical Policy of OMB might well set standards for all Federal agencies for these activities.

Mrs. SCHROEDER. I really want to thank you all; I appreciate what all three of you said. I think too often we don't use the experience of people who have been in agencies, and I think that's part of why we are where we are. I think all of the different points you made were good.

Did all of you find what I think I heard one of you mention that sometimes the executive branch is asking for one kind of survey and the legislative branch is asking something else, and the poor agency is supposed to comply with both.

Mrs. GILFORD. Yes.

Mrs. SCHROEDER. Can you get the two together, or do you just have to attempt to cope?

Mrs. GILFORD. In general, if you have a mandated study, you must comply with the mandate; the study becomes top priority in the agency. Certainly it is the desire of the head of an agency to do an excellent job for Congress. Statisticians like to see data used for important purposes; uses by Congress are extremely important.

Mrs. SCHROEDER. Did you find that too, Dr. Eckler?

Dr. ECKLER. Occasionally it would take place, but I think Dr. Woolsey had more.

Mr. WOOLSEY. No; as a matter of fact, I did not. There are definitely mandated surveys in the area of health, but the responsibility for conducting these was always given to programs responsible rather than to the Center for Health Statistics. The Center for Health Statistics, with I think one exception, was engaged in gathering baseline types of data, not just related to particular programs, but relating to the health of the people of the country and the total resources available in terms of manpower and facilities, and the medical services being provided, things of that sort.

I know from my experience with other parts of the Public Health Service that they have had similar problems; but I did not have to deal with those.

Mrs. SCHROEDER. It seems to me that some of the problems we have been hearing are generated by Congress, because we become overly sensitive as certain kinds of programs come under attack. So we go to an agency and ask them to take the temperature of the program. We are worried about accountability. How are statisticians handling mandated studies?

Mr. WOOLSEY. It's a question of the assignment of responsibilities for this kind of thing. Within the Public Health Service, that's the health part of HEW, it was handled a little differently than education in that data collection responsibilities were somewhat dispersed.

As I say, with one exception, which was a programmatic reporting system on family planning clinics, a nationwide reporting system, NCHS did not get involved in those things. We dealt with continuing baseline data collection systems.

Mrs. SCHROEDER. Congressman Neal, do you have questions?

Mr. NEAL. Thank you, Madam Chairman. Does each administrative agency have its own division to gather statistics?

Mr. WOOLSEY. There are five agencies in the Federal Government which have no responsibility other than the gathering and analysis of statistics, the Census Bureau, the Bureau of Labor Statistics, the Center for Educational Statistics, and the Center for Health Statistics, and the Agricultural Statistical Service.

Then there are a great deal of other statistics gathered but they are a part of the operations of some program. The Social Security Administration is a good example; there is a great deal of data collected in connection with the medicare program and so on.

But these five have no responsibilities except for the gathering and analysis of statistical information.

Mrs. SCHROEDER. The testimony we had yesterday was that probably the main problem from the tax payers/citizens standpoint was not the 5 statistical agencies, but the 55 other agencies that didn't have the

knowledge and the background, and I think that's what I heard Mrs. Gilford say that NCES was trying to get the model together.

Mrs. GILFORD. Yes; that is correct. I want to make it clear that the National Center for Education Statistics collected only 7 percent of the data collected by the Office of Education. The Planning and Evaluation Office collected between 7 and 10 percent and the other 85 percent were collected by program managers.

Mr. NEAL. Would there be an increase in economy, or a lessening of duplicated efforts if that job were to be performed by one statistics gathering body? It seems incredible to me that it isn't done this way now.

Dr. ECKLER. I suppose the most logical place may be the Census Bureau. There was a time that I felt we should move to centralize statistical work. I have changed my views, and I believe now that you have to have separate agencies subject to coordination. It would be so large if you put all the activities together that the management would be extremely complex.

My proposal would be that the Census Bureau be used for service work. The national health survey is done by the Census Bureau, and then the analysis and interpretation and use of data are by the Health Service.

I think these large scale surveys are efficiently handled by organizations like the Census Bureau. I don't think the Census Bureau should have all this brought together. I think the coordination should come from the Office of Management and Budget. Along the lines of what I was saying, it is a valid approach.

Mr. NEAL. Only 7 percent of the statistics having to do with education are gathered by the body that one would think of as being the main statistics gathering body.

Mrs. GILFORD. I think there would be major benefits derived from more coordination. I am not certain that it's the desire of the Center to be the collector of all the data. There is much need for coordination so that duplication can be eliminated.

Mr. NEAL. That would seem to me to be too complex a problem. What would it take to bring about that coordination?

Mrs. GILFORD. It would take more staff. I certainly want to reinforce very strongly the remarks which Dr. Woolsey was making about the need for staff, and the need for a statistical agency to be able to use its funds in the optimal way.

At one point, when OMB held hearings on the NCES budget the agency had allowed the NCES an increase of several million dollars in contract funds, but no increase for personnel. I make the point that I would much prefer having \$1 for personnel to \$2 for contracts. There is a desperate need for more staff in the National Center for Education Statistics.

We had the same problem that NCHS had when program managers would ask us to run surveys for them. We could not do it; we simply did not have adequate staff to do it. We also had the problem that when program data collections were transferred to the Center, they were never transferred with adequate personnel. The impact was that we had to cut back on other activities in order to take the programs.

We had 170 people for NCES compared with the 500 for NCHS that Mr. Woolsey mentioned. You will find that expenditures for both

of these areas represent roughly the same proportion of the gross national product.

Mr. WOOLSEY. I think that the three of us at least are pretty much together on the question of the basic organization, that is, the desirability of having at least a partly decentralized system for statistics in the U.S. Government with a coordinating body for all of these.

I think that there can be great benefits from bringing together within those statistical agencies the data gathering responsibilities; and principally with use of the Census Bureau for the national survey-type things. For one reason, the Census Bureau is the only agency that has a permanent field staff with offices headed up by statisticians. There be one other, but the Census Bureau is certainly best equipped to do this. No private contractor has any such thing. That's the way you get quality in statistical data.

I think that there would be a lot of benefit in trying to centralize the activities within the statistical agencies to a greater extent. Just to give an example of the possible undesirable effects of having a single statistical agency, I might mention Canada, where I have had some experience in consulting, and so on.

There is an agency there which goes by the name of Statistics Canada. I think in authority they have responsibility for the collection of all statistical data collected by the Federal Government of Canada, but they are not completely responsive to the needs of the departments. I know the Dominion Bureau of Health and Welfare has been constantly frustrated in their attempts to gather the information they need, and there is a good deal of bootlegging of data that goes on. I may be talking out of school there, but I think that can be proved.

Mrs. SCHROEDER. Should the health agencies be the ones collecting health data and education agencies educational data? Does this produce a conflict of interest in that you're both attempting to prove that your programs are working and also collecting the data proving they are working. Does that pose a problem?

Mr. WOOLEY. If the agency responsible for the administration of the program is also collecting the data that evaluates the success or failure of the program, I certainly should think you would have. But the point I made earlier is that these 5 agencies have no such programmatic responsibilities. They have no responsibility except for the collection of statistical information.

Mrs. SCHROEDER. I guess I'm saying, should the 5 agencies work with the other 55? We keep hearing the problem is with the 55 and not the 5.

Dr. ECKLER. I wonder if these 55 which we keep hearing about refer to statistical agencies or refer to—

Mrs. SCHROEDER. The troublesome ones seem to be regulatory agencies.

Dr. ECKLER. That's a whole different ball game. I think there is no doubt that the administrative and regulatory agencies have a total impact on the public, whether it's individuals or corporations, far greater than the statistical agencies, yet, everyone blames the Census Bureau and these others—and some of the information that Dr. Stiglmeier was giving about the burden—because much of the burden that receives attention is from these regulatory and administrative



agencies. It's been found repeatedly that a fairly small percentage is due to the statistical agencies.

Again, this office of Statistical Policy Division attempts to consider the burden in every one of the survey forms that goes through and seeks to eliminate duplication.

I think that's the problem that you heard about yesterday rather than the statistical agencies.

Mr. NEAL. We are really dealing with two problems. We are dealing with the problem of the best way to collect and analyze data and also with the problem of what data should be collected. May I get your feelings on that second question?

I hear about this problem all the time; we heard testimony at this hearing. I hear about it almost any time I have contact with constituents at home, especially small business people who feel as if they spend their lives filling out forms. I was in business for a long time; I didn't feel the burden as much as some of my constituents do, but I felt it to a certain degree.

In general terms, what would you recommend be done about this particular problem?

Dr. ECKLER. This is a very difficult problem, and it's probably involving the Paperwork Commission at the present time. It comes from all these different directions.

I think that careful planning is required for statistical work in order to make maximum use of administrative records. We do have in the tax forms a great deal of information which can eliminate, and has eliminated, some of the census inquiries especially for small businesses. This has been an important aspect of the use of tax records. Social security records also may have important uses. I think the information in administrative records may serve a statistical purpose as well as reducing burden.

Mr. NEAL. This next question may be out of your field of expertise. I talked to someone at a trucking company not too long ago. This company reports to numerous administrative agencies, the ICC, and the Federal Trade Commission. Isn't there some way to simplify and coordinate the reporting forms so they would only have to fill out one form?

Mrs. GILFORD. I think that the way to solve this problem is to provide a sizable increase in the staff of the Office of Management and Budget, because it is their responsibility to coordinate data collection of the Federal agencies. However, they are grossly understaffed. Although they work at coordination of data collection, I don't see how they could be expected to do it with the present staff.

For example, there is a person who reviews all the forms on education. We have heard how many millions of man-hours went into filling out those forms. The respondents deserve more careful review of the forms they have to complete.

To get that kind of coordination across agencies, which really does have to be done by the Office of Management and Budget, they need a much larger staff.

Mrs. SCHROEDER. One of the questions we are asking is about the quality of statistics we are getting out of some of these agencies. In other words, we hear things like the FEA is supposed to find out how

much oil there is, so they do an absolutely blanket survey of everyone who has storage facilities. Statistically, they probably don't have to do that; you can measure it efficiently if you have people who understand how to construct a model and how you deal with survey statistics. But since they don't, they attempt blanket coverage by mailing a form out to everybody, and you've got everybody angry.

So, how do we get the other 55 agencies to turn out much better quality statistics?

Dr. ECKLER. About 3 or 4 years ago, the President appointed a Commission on Federal Statistics which came out with a report. One of the features of that report was a recommendation that there be comprehensive program audit of the statistical output of various agencies. This was regarded by many people as an important and needed change.

Some agencies do some of this; they have quality control and evaluation programs; others don't. This would provide a mechanism for getting that done across-the-board.

Here again we have the problem of the Statistical Policy Division—manpower. It does not have resources. It's done a little bit by encouraging the agencies themselves to do some of this job. I don't think they have done very much.

Maybe this would be a step in the direction of getting closer to a uniform quality and being sure that the statistics are reliable that are needed for Government and business policy.

Mrs. SCHROEDER. As an ex-Census Bureau director, could the Census Bureau do that? Could they do the statistical audits?

Dr. ECKLER. It does it for its own surveys. For 25 years a feature, it's been a feature of all census evaluation programs after the census. This involves 2 or 3 percent of the cost, and it indicates errors existing in the figures, errors in responses, and so on. That's an important way of building public confidence and also letting the public know the kind of errors that exist. I think it should be done across-the-board.

Mrs. SCHROEDER. You think the Census Bureau would be a good place for an auditing staff?

Dr. ECKLER. Each agency could do it for itself. I don't think the Census Bureau should be in the position of doing it for other agencies. I think it would be better for agencies to undertake them.

Mrs. SCHROEDER. Do you all agree?

Mr. WOOLSEY. The most important single step is the one that Mrs. Gilford mentioned, and that is of strengthening of the Division of Statistical Policy so it can really carry out the functions that it's supposed to carry out. I am not sure but what it shouldn't also have some additional responsibilities on this matter of upgrading of statistical staff of some of the agencies that are collecting their own data, let's say collection by regulatory programs.

The Division of Statistical Policy, I don't know whether they have the authority for working in this area or not, but they certainly could help.

As a matter of fact, I think in the British Government—don't they have this kind of responsibility within the coordinating body?

Dr. ECKLER. I think they have responsibility for placing staff or maybe people from the central office that get put in charge of a partic-

ular area. We don't have that particular authority here. I think even without that authority, we can exercise some influence over the leadership of the agencies. I think they have done that. I think they help select people for key slots in different agencies.

Mr. WOOLSEY. If they were staffed at the level that they should be, I think there is no reason why the Division of Statistical Policy could not monitor the quality of data collected and also do a great deal more of honest-to-goodness coordination of this activity to make sure there weren't needless reports being filled out by businesses and so on. I just can't see how they can possibly do that job with the people that they have.

Mr. NEAL. Whom do you recommend?

Mr. WOOLSEY. The Division of Statistical Policy, Office of Management and Budget. That's what I recommended that it be in the Federal Government of the United States, partially decentralized but with a strong coordinating body over it that should have responsibility for the review of forms and so forth, for the establishment of standards.

They have done some excellent work in that area. For example, the definitions of standard metropolitan statistical area comes out of the OMB, and certain types of classifications that are used in various parts of the Government are developed by them so everybody is using the same classification. They could be monitoring for quality if they really had the kind of people there, and numbers of people, that would permit them to undertake this.

Mr. NEAL. Let's go to a specific area: education. What would you recommend to solve some of the problems to which you referred earlier?

Mrs. GILFORD. I think that the recommendation Dr. Stiglmeier made that NCES be designated the focal point for coordination of all data collected from educational agencies is a good recommendation. I think it is important for the head of the agency, not the statistical agency, but the Division of Education, to make a careful review of the total data collection activities of the Division of Education to determine the respondent burden which will be allowed for general education statistics and for program statistics. I certainly agree that in total today the response burden is too great.

Mr. NEAL. Especially if it's not being used.

Mrs. GILFORD. I don't know whether it's being used. It takes a big staff to look into the use of items, the importance of the use, and some hard decisions have to be made about which items are important. It's not something that can be done in a day or a week; it takes a staff working continuously. The National Center has never had enough personnel slots to set up the staff, nor the authority to do it.

Mrs. SCHROEDER. Any further questions, Counsel?

Mr. TAEUBER. Just a couple of questions.

Dr. Eckler, the Bureau of Census does 50 percent of its work for others; is that a problem in terms of getting personnel slots?

Dr. ECKLER. Well, the Census Bureau has legislated authority which gives it more freedom to fill temporary positions to give it the ability to take care of this. Perhaps the same kind of authority could be used for other agencies. It has helped the Census Bureau to fill temporary

positions which don't require permanent slots. We have flexibility there on adding people for a particular survey.

Mr. TAEUBER. You're suggesting that a system of temporary slots might be a possibility if one is considering handling the mandated studies?

Dr. ECKLER. It might be used eventually if the Congress saw fit to give that authority to other agencies.

Mr. TAEUBER. I was wondering if any of you have any additional comments on this concerns Dr. Woolsey expressed about having to contract out. He mentioned some penalties that the agencies pay by having to contract out to have work done.

Mrs. GUILFORD. I would like to comment on that.

I tried very hard for several years to get more staff for NCES. I never got an increase in personnel, but NCES did get a sizable increase in the budget, and used this increase for contracting. I thought it was most unfortunate that it was the contractor who was building professional expertise and experience rather than the Center which would have the responsibility for future surveys. I also think it is more costly to contract for surveys than to do them in-house.

We suffered occasionally from the problem that occurs in any organization with a procurement policy which requires taking the low bidder. The more professional and experienced contractor in survey work gave his realistic bid while some of the new contractors really did not know the true cost of surveys. One of their bids would come in the low bid, and we did not get a really professional job. There is no question in my mind that it would be more desirable to do the surveys in-house rather than by contract.

Mr. TAEUBER. You're paying a double penalty, then.

Dr. ECKLER. I would like to comment on the same point if I might.

At the Census Bureau, we have rarely contracted out. In the statistical research area under the program of research and development, it proved possible on occasion to find someone with expertise in that area and enter into a contract to make use of their abilities.

In general, it would be my feeling that when we try to contract out a project, you spend a lot of money in getting the other agency informed of what your objectives are, ground rules, and so forth, and after you finish the survey, if you had made a wise contract, you would get quite good results. But then the trained staff, which you had developed with your money still stays with the other agency, and you have no way of being sure that you could have the benefit of their experience in future surveys. So, I think that's a very expensive way, but sometimes the only way to get a job done.

So, I want to echo what my colleagues have said on this.

Mr. SCHROEDER. Again, thank you very much for your time. You have been most helpful. We really appreciate your concerns and comments.

Our last witness is Mr. Ezra Glaser.

**STATEMENT OF EZRA GLASER, CONSULTING STATISTICIAN,  
FALLS CHURCH, VA.**

Mr. GLASER. I am Ezra Glaser. For over 35 years, I have practiced the use of statistical methods; I have organized statistical programs

and done similar work, mostly in the Federal Government. This includes 11 years in the Division of Statistical Standards and Office of Statistical Standards, two predecessor names for the Office of Statistical Policy.

I appreciate the opportunity to be here today, especially since I find myself in a room populated by a number of friends and colleagues who are trying to say some of the same things I think the committee should hear.

I, therefore, am going to build on the earlier testimony of the morning rather than to repeat a number of points that were made.

In particular, I appreciate the statements of Ross Eckler and others on the importance of Federal statistics for public and private use, but I am going to add rather a specific viewpoint which I don't think the committee has heard in the testimony this morning.

My first remarks concern the organization and administration of the statistical system of the U.S. Government and of the Nation. As the committee has heard, it is decentralized, unlike what we are told of many other countries. I am not sure one should accept too readily what we are told in this respect.

All of the data collected by regulatory agencies are potentially part of the pool of statistical information, and the same is true of benefit-granting agencies. A veteran applying for an educational benefit or for health services is providing information by which the Veteran's Administration will rule on his eligibility; but at the same time, the statistics from these applications contain important information about education and health, respectively.

Information flowing through the administrative channels to Aid to Families of Dependent Children tell us a good deal about the social conditions of the poor.

Therefore, when we say we want a decentralized system but a coordinated one, the reach of the problem and of coordinating activities has to include all of the regulatory and benefit-granting agencies as well as those whose primary purpose is to collect statistics.

The statistical system is coordinated primarily through the mechanisms of the Federal Reports Act of 1942. This act has provided adequate legislative authority for the task; no new substantive legislation is needed.

I am not quite sure what my colleague John Stiglmeier meant, because he spoke of the need for new legislation, but then he turned—as I shall in a moment—to the problems of administration and implementation rather than the enactment of new authorities.

The operating unit for the administration of this act is, of course, the Office of Statistical Policy of the Office of Management and Budget.

The sufficiency of legislative authority does not automatically demonstrate the adequacy of the coordinating function; other factors are important: The objectives and priorities of OMB officials with regard to this function; the size, composition, and quality of the technical and supporting staff in OSP; and the authority in actual practice—not what it says in the statute necessarily—of OSP in matters of standards, design, coordination, and the use of statistical data and analysis in the administration of public programs.

This committee might choose to inquire into the history of funding and staffing, as a number of people here have suggested, and to assure itself that the procedures actually carried out are adequate to perform all of the functions contemplated in the Federal Reports Act.

Dr. Woolsey called attention to the problem of arbitrary personnel ceilings in the statistical agencies, but I am sure the same problem exists in OSP itself, and that should be changed.

Ross Eckler commented on the reduction by half of the staff in the face of great increases of workload and complexity. Everyone on the panel referred to this at one time or another.

Dorothy Gilford also called attention to the problem of planning for balance and relations between survey statistics and program statistics, in itself an extremely difficult and time-consuming job, and one I shall further refer to in a minute.

The coordinating procedures often involve bringing together staff members from a variety of public and private organizations. Some of these people may be interested in fitting their own data into a framework being proposed, but an important role is bound to represent those who believe that they need quantitative information that they do not have, and without which they can not manage their programs in an acceptable and accountable manner. This applies both to public and private administrators, but I am thinking here largely in terms of public administrators, administrators of public programs.

The needs of program administrators are rarely adequately met by the present statistical system. The shortfall involves several dimensions. The remainder of this brief addresses the problem of describing the need in a more systematic manner, and commenting on the implications for the organization, operation, and coordination of the statistical system.

The emphasis is on statistical resources and operations of the Federal Government, but the Federal Government plays so central a role in the national system that much of what is set forth has implications for data that are collected, analyzed, and used by other public and private organizations.

The uses of statistics on social, economic, and technological conditions of the Nation can be set forth in four groups: (1) They are used to measure the status and change in social conditions; (2) they are used to define social goals and priorities; (3) they are used to monitor and analyze changes in the target populations of public programs; and finally, (4) statistics on technology—for example, how to educate, how to maintain a healthy population, and how to deliver health services—play important roles in the design of programs with social objectives, exploring and comparing alternative mechanisms, making practical choices in such matters within existing or foreseen conditions.

Program statistics, which Dorothy Gilford mentioned, relate to programs which have social objectives; data describing these activities might or might not flow readily from normal administrative routines.

Three classes of program statistics might usefully be defined: (1) Inputs or resources made available for the program; (2) activities or processes by which the program operates; and (3) outputs, outcomes, or results of the specific program activity, including both immediate observable results and longer run and indirect consequences.

Typically, information concerning these three classes varies in quality; for most programs, especially those dealing with social problems, the inputs are well known and adequately measured: Funds, manpower, et cetera.

The activities or program processes are less satisfactorily measured and described, and the results or outputs are often not measured at all.

A more serious shortcoming is the inability to use these three classes of statistical information in a single integrated statistical description and analysis of a social problem and its associated public program or programs. Coordination is the term given to the technical activity which would make this possible in more instances than we have achieved in the present capability.

I turn now to the relation among these three classes of program statistics.

A prime need is for the measurement of outputs of programs supported by public funds. This typically requires the comparison of social or technological conditions affected and unaffected by program activities. The measure of output is seldom simple, and it might require a high order of analytical technique as well as significant resources.

Second, a related need is to measure the relation of program inputs to program outputs, directing the administrator's attention to the production of results. This type of analysis also typically requires a good deal of technical skill and adequate resources.

A final need is to relate outputs and processes, or program activities, often emphasizing statistics on technology, since the search is for efficient ways of achieving results.

Public accountability is the term for being able to accomplish the three kinds of administrative requirements set forth above, rationally and in the open: Show that the program is producing the intended results; that resources are allocated with knowledge of what they will buy in each program and program element; that the best program alternatives have been sought out, found, and adopted.

It is far from obvious that routine data systems should carry the burdens suggested by the above comments. Special studies or tests would often prove to be more suitable. This approach is receiving increased attention. For example, the Brookings Institution Panel on Social Experimentation has sponsored studies and is now publishing a collection of books with the principal interest in situations of planned variation rather than passive observation of whatever program variants happen to occur.

Even this approach requires thorough coordination. The base line information is about social conditions which are expected to change under the influence of a program. The measured change in conditions must be capable of comparison with program targets and processes, workload, et cetera, and these data must be capable of comparison in matters of definition, classification, geography, and so forth. That is, all of the data used in the analysis must be governed by the same statistical standards, otherwise comparisons cannot be made with national and other norms. Nor can clinical results be compared with the natural history of a pathological condition, just to give an example.

It is usually difficult, and sometimes inordinately difficult, to assess the effects of a specific program, even if all of the data to be used con-



form to the same statistical standards. It is required to detect the effect of the particular program in a changing world which also contains many influences to confound, screen, oppose, or dilute the program output. This is a problem for statistical methodology. The major tools involve some form of time-series analysis. Generally, if this approach will not suffice, the effect of the program will be detected only by experimental methods.

Experimental methods, typically involve the use of one or more treatment groups in comparison with a control group, with the assignment of cases or customers made in some random manner. For many public programs for the amelioration of some social problem there are legal, ethical, political, and practical limitations to experimental protocols. While there are important problems in the use of social experimental methods, the coordination of the statistical system is only tangentially involved in the technical problems themselves.

Experimental methods require formal analytical models—"experimental designs," to use the technical term—which define the needed data and set forth specifications for their acquisition. If the statistical system can provide coordinated data on social conditions, and perhaps technology, whole species of useful experimental designs can be chosen which would not be practical under other conditions.

As one example: demographic data—coordinated with subject data—such as educational attainment or the availability of health services—can provide suitable sampling frames for the drawing of efficient samples for a specified experiment. Even for the experimental approach, then, the degree of coordination of the statistical system will turn out to be important.

Public administration in the United States has a poor score in its response to demands for public accountability from the legislative branch—by the way, there are several recent laws in education requiring the kind of accountability I noted above, but which are really not responded to—legislative branch, executive officials, special-interest groups, and the general population. Accountability is used here as it is defined above.

At least three requirements will govern the ability of public administrators to better respond to these demands: (1) the quality of the national statistical system, including its degree of coordination; (2) improvement and more experience in social experimentation, construed as trials governed by technically valid experimental designs; (3) finally, the development and application of techniques of statistical analysis capable of isolating program effects from the variety of interfering influences that complicate and confuse the measurements and attribution of program outputs.

This brief has emphasized the organization and coordination of the Federal statistical system. These matters are the substance of the first requirement cited above—a higher quality statistical system—and they profoundly influence the remaining two: Social experimentation and statistical analysis. Experts are available to develop these two in any desired detail, if this is the pleasure of the subcommittee.

Madam Chairman, I have two recommendations: First, that this committee review the administration of the Federal Reports Act. In making this recommendation, I find myself in agreement with a num-

ber of other witnesses of this morning. Second, in its further work, that the committee focus its attention on the needs of public administrators for responding to demands for accountability.

Madam Chairman, I wrote two letters in the last year or so to the Committee on National Statistics of the National Academy of Science. If the committee's permission is obtained, I should like to ask that extracts of those letters be attached to this testimony, because they develop some of these ideas further than I have had time for today.

I will be happy to answer any questions that the committee has.

Mrs. SCHROEDER. Thank you, I appreciate your time and your very well thought out brief.

I think our frustration is how to legislate good administration.

Mr. GLASER. This is a problem because you're facing two requirements; that is, the provision of a large enough staff and high enough quality staff for the coordinating function, but then you must have technically capable and sympathetic policy settings and priority settings in the administration itself.

The reason for this, obviously, is that OMB is close to the seat of authority and power in any administration, and the administration is bound to respond to the competition for attention and priorities.

This committee is engaged, I believe, in a heroic enterprise, but one that is not likely to appear as a banner headline in the New York Times or the Wall Street Journal tomorrow. The problem, therefore, is to find ways to obtain resources and priorities for a function that a number of us know is frightfully important, but which is hardly the most colorful act going on in the public view today.

Mrs. SCHROEDER. I think there is a great suspicion of making it work.

Mr. GLASER. I think, historically, we have been more successful. Under Stuart Rice, I believe, the basic methods and authorities were built. A number of interagency committees came into being; for example, the one working on Employment and Labor Force Statistics. It succeeded over a period of about 20 years, and reshaped the census' current surveys, the Social Security statistical system, the Insured Unemployment statistical system, and the decennial census, drawing the entire activity into a single model, which we now take for granted, but which would not exist without the persistent and competent work of that interagency technical committee.

There are many others, for example, on financial statistics, which again addresses the problem of drawing together into a single financial picture about 10 agencies that collected financial data from public and private organizations. It's precisely the work of the Labor Force Interagency Committee and the Financial Statistics Committee that permitted us to build up the system of national accounts that we now have.

The National Income Division in the Commerce Department collects no data whatever, although they publish three classes of national accounts: the "National Income and Product Data"; "The Money Flows Accounts"; and the "Input/Output Accounts." It's some tribute, I suppose, to our partial success in coordinating the Federal statistical system that these much used systems of national accounts are put together by a unit that does not collect one data element. What we need is more of this kind of machinery.

I feel we have been going downhill for a long time, not just in staff numbers, but in our skill in putting together interagency committees to address some of these kinds of problems.

So, I would like to see not only more positions and more support, and possibly more quality in some parts of OSP, but also priorities and a return to some of the earlier models by which we have accomplished some of these tasks. So, it isn't just a question of having more people, though that is a necessary condition.

Mrs. SCHROEDER. Why is it that OMB hasn't become convinced of the importance? They are in charge of it. It seems to me they should see that need.

Mr. GLASER. I haven't been in OMB now for many years, but I am a little worried about viewing it in this manner. I don't know that the administration and the officials decided on a smaller staff. What happened is that the priorities and the pressures for having lots and lots of big programs within a very small total has caused some of these activities to drift down without anyone explicitly analyzing what would happen in the face of reduced resources; I think that's the way these things happen.

Therefore, what everyone at this table has been saying this morning is that we should call attention to the consequences of recent policy, and we should restore and energize and build up this function in order to answer the problems that your committee so aptly is posing.

Mrs. SCHROEDER. So it's unconscious not conscious.

Mr. GLASER. That's right. It's the outcome of some other decisions.

Mrs. SCHROEDER. Thank you all very, very much. We really appreciate your being here.

[Whereupon, at 11:50 a.m., the hearing was adjourned.]

[Following is an extract of a letter to Thomas R. Kramer, Executive Secretary of the Committee on National Statistics of the National Research Council, dated June 28, 1975. The subject of correspondence was a proposed survey of statistical practices and achievements in the Federal agencies.]

It is evident that my comments would have been much more in place at the time the study was first under consideration, because I favor a completely different approach to the problem of upgrading statistical practice in public agencies. Ben Mandel's excellent article notwithstanding, I do not think that lists of examples constitute the best approach for your purposes as I understand them. There is a large literature of meritorious examples, but much of it appears in such form and such places that only professional statisticians and related types will find it. There seems to be a belief that repackaging and disseminating this literature—with guidance and comments—will provide adequate understanding and motivation for more widespread use of improved statistical methods. I doubt that this is so. At least the more successful operations research approaches introduced skilled personnel with problem-solving orientation with their technical methods (Navy Operations Evaluation Group of MIT, Army Operations Research Office of Johns Hopkins, RAND for the Air Force, Technical Analysis Division of the National Bureau of Standards, Computer Applications Section of NBS, etc.)

Probably more critical than another publication is the provision of trained personnel, and a suitable authority structure for the introduction of improved methods in a bureaucracy that is often understaffed, overloaded, and often disorganized. Are we now asking them to deliberately organize something new and different without additional staff resources? If there are to be new technical units or additional trained personnel, what is to be the function of the casebook?

Below, I belatedly offer a different approach, which grows out of some ad-

ministrative history that did in fact demand a massive upgrading of statistical practice, without, however, providing the time or resources to make the effort productive. Authority there was aplenty. And much of the need was real. But little of permanent value eventuated.

I beg you to tolerate the rather long introduction to my suggested alternatives; I fear that they would be incomprehensible without it. *I shall argue the importance of recognizing unmet needs for improved application rather than (or in addition to) commendable examples.*

#### *A. The survey as a mechanism*

I regard the survey strategy as a last resort, in the absence of any theoretical or historical criteria to assign importance to one aspect of administrative operation or another. I believe that it ignores some recent important issues in public administration in which the theory and practice of statistics should have played major roles; but they did not do so. I shall argue that these issues are very much alive, and they must be faced in one way or another; indeed, the most constructive future for statistics will probably tend in this direction—as it affects the business of governments.

In order to explain my conceptualization of the dimensions of the program confronting the Committee on National Statistics, I shall impose on you several structured sections: my own program in the Graduate Program in Public Administration at Nova University (Section B, below); some comments on the "policy sciences" and on public expectations regarding the conduct of the public business (C); a review of the issues inherent in these expectations or standards (D); and some possible steps for the Committee's study if it is to contribute importantly to the essential needs for improved administration of public programs. (E).

I apologize in advance for the length of this commentary, but I lack the wit to make the essential points in a shorter space. A basic point is that statistical science and its application function as tools—as devices far more subtle than a typewriter, but the matter of usefulness depends upon what is to be typed. The central issues relate to what we are trying to do with the theory and practice of public administration—in its broadest sense—and to the constructive part that technical statistics might be made to play in this necessary evolution.

Contrariwise, it is inconceivable to me that the basic issues would be identified, studied, related to statistical science, and systematically presented by a casebook approach, even if the effort were blessed with the best of luck.

#### *B. The Nova University program*

After extensive preliminary work by the National Academy of Public Administration, and careful deliberation by its own prestigious advisory committee, the Graduate Program in Public Administration was launched about a year ago. It is an off-campus degree program for management personnel. The students tend to be well into the middle management of federal, state, local, and intermediate governmental units. Median age is probably in the late thirties, about half already have a Masters Degree, but not in public administration.

The format is unusual. A "cluster" of students is gathered in a center of governmental activity. It meets for an intensive two-day seminar each month (Friday, Saturday) as well as for auxiliary meetings on other occasions. Each student prepares a critical paper on assigned readings (provided by Nova) for each seminar. The sessions are largely taken up with the presentation and discussion of these papers. Each topic in public administration—or "sequence"—comprises three months of reading, writing, and critical discussion. (There are other requirements also, including the equivalent of a master's thesis, qualifying examinations, etc.)

One of the early "sequences" is in "quantitative methods of administration." It has been my privilege and responsibility to develop this sequence, selecting the readings, hiring the "preceptors" (including myself) to conduct the seminars and evaluate the individual papers, to evaluate the program, and generally to make the experience a rewarding and instructive one for mature and experienced public administrators.

Atypically, my sequence also requires three exercises, one for each month. Consistent with the Nova approach, there are no hypothetical cases: all of the students work relates to his own real-life organization and program with all of its problems, imperfections, restraints, peculiarities, and strengths. (There is a

relaxation of political problems, however, in order to maintain a focus on the technical aspects; other sequences are rich in the care and feeding of the political aspects of public administration.)

From the outset, specific instruction in statistical methods was avoided, although their importance is repeatedly stressed and demonstrated amply thru the three months. The students—really “participants”—have usually studied statistics, but typically in their subject-matter context: sociology, psychology, education, public health, engineering, etc. What is most needed is a conceptualization of the role of technical statistics (in contrast to intuitive manipulation of “numbers”) in public administration, and some concentrated practice in model-building, design, and analysis for their own immediate situation. What do the three monthly units contain?

The first month requires the critical review of the formal objectives of the organization, if any, and a recasting of them at the student's option. If no stated objectives exist, the student will construct his version of the implicit objectives, which he may also modify. Measurability is immediately an issue, since rational techniques of management cannot accept absolutes (such as the complete eradication of crime). We accept with great reluctance the conclusion that an operating agency has a program whose activities and outputs cannot be estimated, even indirectly or with the use of surrogates. This exercise also requires a conceptualization and design for a management information system which follows no standard structure, but which might be unique to the particular organizational unit. It starts with the meta-question: What entities (work flows, production rates, delay times, queues, utilization rates, etc.) must this particular real-life outfit have to watch in order to overcome its known or suspected problems, and to monitor modes where troubles might earliest be detected? What kind of reporting systems or observation mechanisms? How is information to be gathered? Analyzed? Presented? Tested for validity? Quality-controlled? All of this against a background of specifically conceptualized outcomes.

The second month requires a detailed definition of direct outputs, and methods for their measurement and analysis. Relation to inputs, including a consideration of competing technologies (cost-effectiveness) and specific input-output relations (production functions).

The third month proceeds from direct outputs (above to indirect outputs, or—if you prefer—the social, economic, and technological consequences of the direct outputs, with methods of estimation.

Needless to say, nobody ever gets all of this done, although this, in principle, is what we officially demand of our public administrators (Section C, below). The students are required to face the issues, to assess various strategies and approaches, explore one or more methods—with real data—in a heroic attempt to get as far as possible to meeting the demands.

They conclude with a critical review of concepts, practices, and technical feasibility.

In short, we try to teach quantitative methods, from the *manager's viewpoint* by forcing our students to face the critical quantitative issues (measurement, analysis, relations) in terms of their own agencies and programs, but with the emphasis on a critical appraisal of the feasibility and usefulness of the approach, rather than a force-feeding of the “right” way to perform, under some rubric of “modern management”.

The sequence described above relates to the Masters level. The Doctoral level—just getting started for survivors from the first clusters—includes a three-month sequence on the “Administration of Research and Development”, for which I am also responsible. Its three units comprise: (1) the need for and opportunities of an R&D program in your agency and program (assuming a strong infusion of political and financial support); (2) the design and administration of a research program; (3) the design and administration of a developmental program (including demonstration, dissemination, etc.) Statistical technique plays a major role here, too, whether the intent is greater cost-effectiveness, expansion of the program to encompass additional services, extension to new target populations, etc. Indeed, the developmental process might require a master experimental design in order to determine the predisposing conditions for success and the counterindications.

In both of these sequences, the approach is to repeatedly ask the student what his most important problems are (in view of evolving demands upon public managers), what potentials and possibilities for improvement seem to be

present, and then to require him to direct his statistical and analytical practice at those important matters. The judgment of importance is pre-existing, even if the student has never before had to articulate it. The techniques are called into full use because the results are desperately needed. No credit is given for neat analyses of contrived problems or for elegant but unessential results.

### C. The "policy sciences"

How did we get into this particularly difficult and demanding approach to the teaching of quantitative methods? Briefly, we considered recent important trends in public administration, and we tried to take them seriously:

1. *Output-oriented management*, closely related to Management by Objectives, in which the focus is on results, rather than on the resources committed to the activity. The outputs can be "process" outputs (cases disposed of, number of clients in the program, numbers of teachers trained) or "final" outputs (reduced recidivism rates of ex-convicts, reduced dropout rates for secondary schools, reduced unemployment in some specific target group).

2. *Cost effectiveness*, a deliberate search for alternatives, which are then subjected to systematic and disciplined study (often including experimentation) in order to find the one with the greatest output per unit of input—for whatever output(s) measured.

3. *Production functions*, formal algorithms for estimation of outputs for any array of inputs—an essential capability for budgeting in output terms, and an essential element in zero-based budgeting (in contrast to incremental budgeting).

4. *Benefit measurement*, a metric that allows the scaling of *different kinds* of outcomes. If we have only one output (reduced number of accidents on a particular highway), any accident-reduction program can be compared with any other one without questioning the value (social, economic, humanistic?) of such reductions. Cost-effectiveness studies will help select the best program, subject only to issues of reliability, validity, etc. But a budgetary (allocative) issue between two different programs (dropouts v accidents) which would command the same resources—at least in part—(money, staff positions) requires a metric common to both. The naive benefit-cost analysis claims to do this—even to the point that the choices about resource allocations become practically automatic after the critical benefit-cost ratios have been computed.

5. *Target analysis*, the specific study of the population intended to be reached, compared with that actually reached. There are issues of efficiency (cost per unit of result) and effectiveness (portion of the target population actually reached, probably on an increasing-cost function as the easy cases are covered). There are possibilities of missing the target partly or altogether.

6. *Evaluation of programs*, a combination of all of the above, in a structured and controlled manner. Evaluation is usually attempted if at all, well after the program has begun operation, and it is frequently found to be hopeless. Correctly so, unless the plans for the operation of the program included an explicit experimental design that might serve to separate closely related factors, isolate the influence of individual factors—especially those which comprise the purposive public intervention—and the explicit measurement of interactions. The last is particularly important for social programs (probably most of them) which will "work" only under certain conditions. These conditions must be identified in advance, assigned a suitable metric, and built into a formal experimental design. If there is any part of the public process that is totally and hopelessly at sea without the resources of statistical science, it must be here.

7. *Public accountability*, a requirement that the public business be managed in a rational manner; not only must the "right" answer be found, but it must be arrived at by means of an acceptable procedure, and with the use of explicit and acceptable criteria of choice. There is a burden of proof implied than can only be satisfied by using some of the apparatus set forth above. And the whole process must take place in the glare of critical—and often adverse—public scrutiny.

8. *PPBS*, a particular formalization of much that is stated or implied above. Much of the above apparatus was contained in the PPBS directive of President Johnson, with little allowance for start-up costs and problems, almost no appreciation of the technical demands, and no evident allowance for differential feasibility from one agency or program to another. With the inevitable and complete collapse of the machinery, the requirements were formally withdrawn. But a substantial part of the essential requirements survive as part of the evolving ethic of public administration and as part of public expectations. There

were a lot of good ideas here. Where did they go wrong? In my view, some potential advances in the conduct of the public business went astray because the required operations had important requirements for the application of technical statistics (among other requirements) which were completely ignored in the formal machinery and in the manner of implementation of the directive. No allowance was made for the necessary timing, authority structures, competition for resources, or proper staffing to conduct this inordinately difficult and highly technical operation. In retrospect, a public-administration-trained-technical-statistician should have gotten his hands on this machine before it was started down its ill-conceived and unprofitable road.

9. *The central issue:* how seriously are we to regard the developments of the last twenty years to make the public process more rational, more precise, and more open? Especially how seriously for major decisions and for budgetary allocations? In my view, the ideas expressed above have inherent merit and social importance: how can they be tempered and put to use with a proper regard for the statistical feasibilities and the technical demands? In my view, these are the issues that the NAS and the committee should use as the conceptual framework for the study of statistical practices and the opportunity for long-time gains from the resources of statistical science.

10. *Operations research,* a problem-solving orientation, capable of application in a fragmentary manner. While it can be highly technical, this approach has a less rich conceptual background and a less disastrous administrative history. It could be a retreat position for the NAS study. Essentially, it offers to use modeling techniques and quantitative methods for the solution of a problem, usually by means of an interdisciplinary team of applied scientists and practitioners. In practice, it usually begins by questioning whether the stated problem is the real one or the vital one. (In my experience, it rarely was, and the literature tends to the same conclusion.) If the NAS wants to proceed opportunistically, and without preconceived notions of what might be accomplished by statistical science for the public business, I would urge that at least this approach be used. At least, OR starts with a presumed problem. This can lead the way away from the familiar traps: there are many data available in our financial reports (or in our computer) so the answer must surely be there; crime goes up even after LEAA has spent billions, so the program has been a complete waste. At least a modeling approach can slow down the jump to an unjustified conclusion.

#### *D. The basic issues*

The purpose of the above review of issues in public administration which relate to statistical practice is to insist that NAS focus on matters that are important, and in tune with social perceptions and tendencies regarding the operations of public enterprise. In my view, we are on a loosely defined watershed of deciding the limits of social action for the solution of social programs. I believe that much more of the history of social program inadequacy—sometimes failure—can be traced to ineptness and poor understanding of the kinds of problems that statistical science was created to deal with. Is there a more vital challenge to the theory and practice of statistics than this?

Some recent attempts to utilize more satisfactory methods of making decisions and of administering programs have been almost incredibly inept. But the requirements for accomplishing what they were attempting are very much alive. For example, all of the programs administered by the U.S. Commissioner of Education must be "evaluated" by seven months after the end of each fiscal year—by statute. There is authority for using a portion of each operating budget for preparing these evaluations. The education programs are not alone—with various sanctions almost all of the programs of the federal government require "evaluations" as to their "consequences". The budgetary authorities are not going to stop demanding evidence of accomplishment or stop shuffling funds from one program to another on flimsy evidence or no evidence at all. The use of state or city governments as administrative mechanisms does not change the picture: the burden of planning, evaluation, etc. is merely passed into other hands—hands that are probably even less well prepared for the tasks.

The simple reality is that *we need these improvements!* We need better means of accomplishing the purposes of the above enumeration of managerial tasks, administrative ineptness aside. Whatever their form and sponsorship, we need better ways of conducting the public business, and the naive PPBS directive erred principally in demanding that we get it all at once, for all agencies and programs, full-blown, and without delay.



My suggestion, therefore, is that NAS focus largely on the critical areas of need for improved statistical practices, rather than finding successes wherever they seem to happen. A deliberate search for cases where a systematic start has been made on the billion-dollar issues could represent more progress than a group of nicely-turned studies of a more conventional sort. The approach could include (1) search for some good work; (2) encouragement of further technical work to the same ends; (3) plans for specific training to meet these needs; (4) search for devices for professionalizing and accelerating the entire process.

The inverse statement of my recommendation could be frightening: if those who have the technical competence to understand what is feasible and how to proceed remain inactive, what alternatives are left other than an endless repetition of badly conceived moves to demand all of the forms of planning, programming, and budgeting that are listed above? All without a sense of what should be demanded, and with what burdens of proof? It would seem that the field has been abandoned to "unknowing bureaucrats" and "politicians", whose bungling we technical experts can denounce after each of their failures. But is this really fair? What responsibilities do we have?

#### *E. Some possible steps for moving forward*

First, the NAS committee must decide whether it wants to establish a conceptual framework within which it will collect materials for illustrative use in the betterment of statistical practices in the federal agencies. If so, there will be implicit or explicit criteria governing what it will be important to find.

Then it must decide on some array of examples or classes of applications that owe their importance to the need that they meet, or to the unusual accomplishment they exemplify—with the possibility that the final list will contain both types.

A paper then must be developed which sets forth the committee's conceptualization of its job, along with guidelines for selecting and reporting candidate "cases". (If there is a well structured search, the results can be far more than isolated "cases". It should be possible to present the present state of the art, to identify areas for training and for improved methodology, and for jointly activated studies with economists, criminologists, educators, etc. These results cannot be derived from "good" "cases" otherwise, even though they be successful elegant, and with elements of sensationalism with counter-intuitive results—all of which make the examples worthy in some real sense.)

Agency representatives must be chosen who are capable of searching out cases in their agencies with some understanding of the above.

Brief training will probably be necessary, possibly no more than a half-day seminar to review the NAS/NRC viewpoint and purpose, with a generous allowance for questions and answers.

An elementary management mechanism must be set up to assure that the machinery has not stopped, and that each important agency has someone actively searching for good material.

A preliminary review procedure is necessary to react quickly to incoming material: to redirect wandering activities, to identify promising entries and to obtain as complete accounts as will be necessary, while the trail is still hot, and to encourage early signs of good work.

A systematic classification routine to review the entries for their cumulative content, especially for the identification of areas without suitable examples.

A log or archive, which will maintain names, phone numbers, etc. as well as files of documents, for follow-up as the committee begins the work of preparing their report.

\* \* \* \* \*

[The following letter resulted from a conversation with Dr. Taeuber on the subject of the letter reproduced above; it is dated July 29, 1975:]

RICHARD C. TAEUBER,  
*Committee on National Statistics, National Academy of Sciences, Washington, D.C.*

DEAR DICK: I enjoyed our discussion yesterday about the need for a new kind of leadership from the statistical profession in the potential contribution of statistical science to public administration. In this letter, I am taking advantage of your suggestion that I put my ideas on paper, although they are patently in rough form. You may use the contents as you see fit.



### 1. Overview

I believe that there are important trends in public administration that will place more emphasis on quantitative approaches—and therefore on quantitative techniques—in the accepted ways of doing the public business. These trends are already well established, but their existence and importance have been partly masked by undue attention to the particular formats adopted by the Federal Government, in its response to these evolving demands for rational decision making and public accountability.

While the basic ideas have merit, the manner of their implementation has been unskilled, unrealistic, and evidently unfair. The basic shortcomings were: (1) lack of sufficient application of statistical science, in its broad conceptualization; and (2) inexperience and lack of skill in those who attempted to administer some important reforms in the planning and budgeting processes.

As a profession, applied mathematics (statistics in all of its branches, operations research, decision theory, etc.) almost remained aloof from these developments, which were well within the essential area of application.

In a historical sense, the demands made upon public administrators were important, and they have persisted—albeit in different forms. It is this durable requirement for more rational decision making processes, and for program appraisal and accountability that creates an opportunity for statistical science to make a contribution to the public business that no other scientific discipline can accomplish.

### 2. Demands Upon Public Administration

The code work most descriptive of the growing quantitative emphasis in public administration in PPBS—Planning, Programming, and Budgeting System. First introduced in the Department of Defense, it was mandated by President Johnson for all Federal units and programs. The conditions for its blanket introduction could hardly have been worse. The results were largely exhibited in confusion, waste in administrative procedure, and increased overhead in many operations. Perhaps the most important real effect was the tendency for decision making to move to higher levels of governmental organization—a doubtful achievement, especially since it typically represented the view that there was good enough information reaching the higher levels to justify the shift, a conclusion that a trained statistician might find difficult to accept.

The move toward more "rational"—quantitative—decision making was poorly managed in the extreme. The timing was unrealistic. Requirements for trained personnel were almost ignored. The difficulty of many of the problems—especially in the newer social programs—was probably underestimated by two orders of magnitude. The competition for resources between programs with outputs that were innately easier to measure, and those that were inordinately difficult was unfair to a fantastic degree. The implied burden of proof to show that programs "worked" was unmatched by the necessary development of analytical techniques or the provision of a developmental phase.

Yet the demands were real and they were important. It is necessary to allocate resources among many purposes and programs that are beneficial to some element of society. It is essential to choose from among various ways of doing things. It is important to attempt to measure the outcomes and effects of deliberate interventions, especially the more recent ones that attempt to mitigate social ills. It is desirable that those who make decisions be able to elucidate the processes by which a decision was reached, what data were used, how relationships were constructed, what sensitivities exist in the response patterns, and generally all of the kinds of relations and interactions that are the concern of applied mathematics. What was basically lacking was any reasonable degree of marriage between technical competence and administrative realism.

It is easy to point the finger of blame, retrospectively. Almost everyone involved in the PPBS episode did badly. As a consequence, there have been many reactions against the use of quantitative approaches and techniques generally, rather than against their particular embodiment in the PPBS machinery. Most administrators probably regard the whole episode as a bad dream which they hope will not recur. But the essential ideas have arisen again and again: in the unavoidable procedures of the budget mechanism; in the reviews of higher administrative authorities; and, importantly, in legislation that requires reports to the Congress on the operations and consequences of federal programs.

During these evolving changes in the logic and style of public administration for a rapidly growing governmental response to social problems, where was the statistical profession? As a profession, it could have been in hiding.

### *3. The Scientific community's participation*

Individual applied mathematicians (statisticians, operations researchers, decision theorists of various stripe, etc.) played vital roles. Those in greatest prominence had been associated with military applications of what have come to be called the "policy sciences". Mostly, they were lost in their new roles, and they were largely unequipped to understand why this was so. Individual applied mathematicians also performed their usual tasks in the organizations of the government, attempting to use their technical capabilities to meet new demands, as they have always done.

But, as a profession, statistics was almost unresponsive. There was little sensitivity or understanding of the enormity and importance of the new challenges to the profession. The professional societies failed to adapt their journals, meetings, and other activities to the new need. Perhaps the greatest response was from the American Society for Public Administration, the one least equipped to provide the technical services that were needed. It was a missed opportunity of substantial proportions.

However, there is no end to this episode. In a quieter and less bombastic style, the twin demands for rational procedures and accountability continue to be expressed. This may, indeed, be a suitable time for the statistical profession to undertake a deliberate initiative.

### *4. NAS as spokesman for the statistical profession*

It is hardly necessary to argue the appropriateness of NAS as a representative of applied mathematics before the Federal Government in this regard. Such a role is consistent with its basic purpose. The Committee on National Statistics has a charter which should admit an initiative which is addressed to the development and promulgation of technical tools to meet important demands for which the profession would seem to be responsible. The membership of the Committee includes several who have distinguished themselves by bridging the gap between statistical science and the administration of public programs—precisely the combination that would be required for a serious initiative of the character required.

The Committee therefore is already well equipped with insights into the problems of defining outputs of social programs (those conducted with public resources); the problems of measuring them; the relating of results to inputs; the sorting out of program effects from masking or interfering factors; the isolation of sources of variation from deliberate program interventions and other factors (by variance partitioning devices, for example); the designing, conducting, and interpreting the results of social experimentation (with proper sensitivity to the ethical and political aspects involved); and the assessing of the condition of our society in its many dimensions, and measuring changes in these conditions.

It is these technical skills and experiential insights that would be necessary for the development of a useful initiative that would direct the energies of the statistical profession toward new social needs, and would simultaneously enhance the influence of the statistical profession in the future directions of improved administration of the public business.

## COORDINATION OF STATISTICS

THURSDAY, APRIL 8, 1976

U.S. HOUSE OF REPRESENTATIVES,  
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,  
SUBCOMMITTEE ON CENSUS AND POPULATION,  
*Washington, D.C.*

The subcommittee met at 9:15 a.m., in room 311, Cannon House Office Building, Hon. Patricia Schroeder (chairwoman of the subcommittee), presiding.

Mrs. SCHROEDER. The subcommittee will come to order.

I would like to welcome Mr. O'Neill and his colleagues from OMB to this continuation of our hearings on the problems in coordination of the statistical activities of our Government. As our earlier hearings demonstrated, it is imperative that the data acquisition efforts of all Government agencies, individually and collectively, be coordinated to the maximum extent possible so that those data that are acquired can be depended upon to provide the desired information for governmental and societal purposes efficiently and effectively, with minimum redundancy and minimum burden on those who have to provide the data.

It pleases me to note that your statement supports these basic objectives, and lays stress on the need for a major effort in planning and coordinating the acquisition and use of data by our Government. We are also pleased to note the beginning development of a planning framework for Federal statistical activities over the next decade.

At this point I might take note that yesterday the House passed a bill calling for a mid-decade census of population and housing. We feel that passage of this bill at this time is important so that the planning of statistical activities for the decade of the eighties, and all subsequent decades, can take full advantage of a series of 5-year benchmarks and small area data and thus maximize the impact of that bill. We also feel that this timing gives sufficient time for planning and coordination of a broad variety of social data needs so that the net cost of this major program can be minimized, if not more than offset, through the reduction in the size and scope of many intercensal surveys, and the complete elimination of some whose needs would be supplied by the 5-year census cycle.

As a final comment, I would acknowledge that Mr. O'Neill is quite rightly trying to reduce the size of the staff of the OMB, but we should avoid the temptation to look just at the statistical budget when evaluating the scope of activities of the Statistical Policy Division and the size of their staff. SPD's activities and span of control in imple-

menting the intent of the Federal Reports Act of 1942 go far beyond just the acquisition of data for general statistical purposes. They have control over a broad range of program data acquisition activities, for administrative and evaluative purposes. As pointed out quite forcibly in our earlier hearings, it is in this latter area where additional staff resources would save many multiples of their salary costs through more efficient data acquisition program which would reduce direct governmental costs and through reduction of the time and other resources needed by respondents to supply the data and thus reduce societal costs.

We would like to welcome you to the committee Mr. O'Neill.

Mr. O'NEIL. Thank you very much. With your permission, and in the interest of saving everyone's time, I will follow the procedure you have and simply ask that my statement be inserted in the record.

And I'd also like to thank you very much for the procedure you follow in these hearings. I think it's been most helpful to us to have an opportunity to respond in writing and therefore give more careful thought to many of the questions the committee was interested in pursuing with us. I think it's a very good procedure because it does allow us to be more reflective in responding to the committee.

With those general observations, I'd be very pleased to respond to questions you may have.

As you know, I have with me Dr. Joseph Duncan, head of our Statistical Policy Division in OMB, and we are both prepared to answer any questions you may have.

[The statement follows:]

TESTIMONY OF PAUL O'NEILL, DEPUTY DIRECTOR, OFFICE OF MANAGEMENT & BUDGET  
BEFORE THE SUBCOMMITTEE ON CENSUS AND POPULATION  
HOUSE COMMITTEE ON POST OFFICE AND CIVIL SERVICE  
APRIL 8, 1976

It is my pleasure to meet with you this morning to discuss the important topics of "Coordination and Planning Within the Federal Statistical System." This topic represents a longstanding responsibility and function of the Office of Management and Budget and its predecessor, the Bureau of the Budget.

The general questions which you have posed to us in your letter of March 12, 1975 concerning structural change in the Federal Statistical System, highlight the difficult issues associated with proper organization of the Government's statistical operations.

This debate about appropriate organization has continued for many years. For example, I understand that the Bureau of Efficiency in 1922 recommended creation of a single statistical gathering agency, however, no action was taken on its recommendation. Since that time there have been a number of reviews of statistical organizations. Most of the reviews have favored the present decentralized approach.

For over 40 years<sup>1/</sup> the U.S. Federal Statistical System has been essentially decentralized, with a crosscutting coordination and planning function to assure consistency, reduce duplication, and set appropriate standards for all statistical work. Data collection and data analysis have been decentralized in the agencies.

Nearly 20 years ago, Dr. Raymond Bowman, Assistant Director of Statistical Standards in the Bureau of the Budget, pointed out that "almost all students of the (U.S. Federal Statistical System) have concluded, whenever they have been pressed for a conclusion, that this very decentralization has been, in large part, (the U.S. Federal Statistical System's) strength."

Further, Bowman pointed out:

"It has been recognized that with a decentralized system, there has to be a central agency responsible for direction and supervision of the Government statistical program viewed as a whole and for centralized control over data collection processes. This central agency should provide the cohesive force and leadership essential to the achievement of a Federal

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<sup>1/</sup> The establishment by Executive order of the Central Statistical Board in 1934 created a central coordinating office with functions similar to those which are presently undertaken in the Office of Management and Budget through its Statistical Policy Division.

statistical program which will serve the need for integrated data describing the operation of our society and will also meet the data requirements related to specific administrative or regulatory responsibilities of the Government. It should also ensure that unnecessary duplication of effort among agencies is prevented and that costs to both government and respondents are minimized. In addition, minimum standards for statistical procedures employed by the various agencies engaged in data collection and tabulation must be maintained and standard systems of classification established and promulgated. The Office of Statistical Standards of the Bureau of the Budget is intended to perform these functions."<sup>2/</sup>

Bowman's points continue to be appropriate 20 years later.

The discussion concerning the organization of statistical services has, of course, continued during the past 20 years. The United Nations Statistical Office, for example, has recently reviewed statistical organization in a large number of developing and developed countries. In a draft report entitled "The Organization of National Statistical Services -- A Review of Major Issues" by Dr. Simon Goldberg, Head of the United Nations Statistical Office, he states:

"There is wide agreement that it is beneficial to a country to have a strong central statistical office which is administratively autonomous and whose head serves as the country's chief statistician and reports directly to a Minister. The range of topics, which the central office should cover, and the authority of the chief statistician over the statistical activities of other departments are subject to controversy . . . . It should be noted also that, even in a highly decentralized system, there are centralizing influences: Usually a centrally located body is charged with responsibility of coordinating the system. Moreover, a few large agencies in decentralized systems tend to be predominant -- for example, the Bureau of the Census and the Bureau of Labor Statistics in the United States. Thus, the main issues are probably best conceived as involving 'degrees of centralization' rather than two opposing poles of centralization and decentralization."<sup>3/</sup>

Thus, the focus of these hearings and the discussion which you are leading addresses a topic of continuing importance. It is my view that the planning and coordination function of the Statistical Policy Division is an important cohesive force in the U.S. Federal Statistical System. At

<sup>2/</sup> Raymond T. Bowman, "Development of an Integrated Federal Statistical Program," Proceedings of the Business and Economic Statistics Section, page 75, American Statistical Association, 1956.

<sup>3/</sup> Draft report prepared for the United Nations Statistical Commission Meeting, November 1976, pages 17 and 18.

the same time, I believe that the Federal Government is best served by a highly decentralized statistical system which places primary responsibility for data collection, processing, and analysis within the affected agencies. Finally, I agree with Simon Goldberg's statement that the centralization of general-purpose activities, which occurs in large agencies like the U.S. Bureau of the Census and the Bureau of Labor Statistics, is desirable.

I believe that the record of the Statistical Policy Division speaks for itself. However, I would like to underscore the importance which we attach to "A Framework for Planning U.S. Federal Statistics, 1978-1989," which is being developed in cooperation with the statistical agencies and major outside users.

As you will note in the outline and the brief preface which accompanies it, this is an extensive effort. Over one year of discussion and review have been accomplished, which will lead to a draft report by mid-year. The process involves substantial contributions by the agencies which produce statistics as well as the policymakers and others who use statistics. Next year an intensive public review is planned before the framework document is completed.

You will note that we view the role of the planning document as:

1. A framework for agencies to improve coordination.
2. A vehicle for setting and revising statistical priorities for multi-purpose and large-scale statistical programs.
3. A forum for identifying crosscutting statistical issues.
4. A mechanism for improving feedback from public and private users of Federal statistics.
5. An overview to specific plans of statistical agencies.

We believe that this effort directly addresses many of the concerns which were addressed in your questions to us.

I will be pleased to answer any questions which you may have.

Attachment  
 April 8, 1976 Testimony of Paul H. O'Neill  
 Subcommittee on Census and Population  
 House Committee on Post Office and Civil Service

**A FRAMEWORK FOR PLANNING  
 U.S. FEDERAL STATISTICS  
 1978-1989**

The attached topical outline was prepared to indicate the scope and organization of "A Framework for Planning U.S. Federal Statistics, 1978-1989" which is currently being prepared. It is circulated at this early stage to provide a framework for adding new issues and concepts to the agency-based process of setting forth a forward-looking program for Federal statistics.

A basic draft of the Plan is expected by the end of 1976, with revision and prioritizing scheduled for 1977. The overall phases are:

Phase I will be an overview prepared by SPD as a target for agency input -- due for completion by July 1976.

Phase II will incorporate agency comments -- due by December 1976.

Phase III will be the product of review and comment from governmental policymakers and public advisory (user) groups -- due by December 1977.

Phase IV will be a series of annual updates and revisions until the framework needs to be redone (probably mid-1980's).

During the first six months of 1976, the Statistical Policy Division will be drafting basic sections of this document using outputs of inter-agency committees, previous study groups, and current agency budget submissions. In some cases agencies will be drafting input materials.

The outline will be subjected to continual revision during the process. Comments and suggestions from data users, advisory committees, professional organizations, and individuals are encouraged. These can be directed to individual agencies or to:

Joseph W. Duncan  
 Deputy Associate Director  
 for Statistical Policy  
 Office of Management and Budget  
 Room 10202, 726 Jackson Place, N.W.  
 Washington, D.C. 20503



A FRAMEWORK FOR PLANNING  
U.S. FEDERAL STATISTICS  
1978-1989

Prepared by the  
Statistical Policy Division  
Of The  
Office of Management and Budget  
In Cooperation With  
Federal Agencies With Responsibility  
For the Collection, Processing, Analysis, and Dissemination  
Of Major Governmental Statistical Programs

(This tentative outline was drafted to serve as a framework  
for constructive criticism concerning topics, issues,  
agencies, and concepts to be addressed in  
"A Framework for Planning U.S. Federal Statistics, 1978-1989.")

Preface

- I. Background -- Section 103 of the Budget and Accounting Procedures Act of 1950.
- II. Relation to Other SPD Documents:
  - A. Statistical Services of the U.S. Government, 1975.
  - B. Federal Statistics: Coordination, Standards, Guidelines, 1975.
  - C. Federal Statistical Directory.
  - D. Standard Metropolitan Statistical Areas, 1975.
  - E. Others.

The Nature of the Plan

- I. Role of the Plan:
  - A. As a framework for agencies to improve coordination.
  - B. As a vehicle for setting and revising statistical priorities for multipurpose and large-scale statistical programs.
  - C. As a forum for identifying crosscutting statistical issues.
  - D. As a mechanism for improving feedback from public and private users of Federal statistics.
  - E. As an overview to specific plans of agencies.

II. The Character of the Plan:

- A. A flexible document subject to change as priorities evolve, as problems are solved, and as difficulties arise.
- B. It is not a budget document, but it has budgetary implications.
- C. It examines agencies, programs, and issues with an objective of clarifying important interactions in the decentralized U.S. statistical system.
- D. It focuses on the 1980's, recognizing the base of the ongoing program of the 1970's and the present unresolved issues.

III. Planning is a Participatory Process:

- A. It must recognize the needs of both the producers and the users of statistics.
- B. Agencies will have needs which are not addressed in the Plan:
  1. The Plan is directed to major general-purpose needs and interagency concerns.
  2. Agency plans will deal with specific needs of agencies.

IV. The Keys to an Integrated Statistical System:

- A. Standard concepts and classifications.
- B. General-purpose collection efforts.
- C. A formal network of policy committees defining needs and priorities in functional areas.
- D. A formal network of technical interagency working groups.
- E. An institutionalized mechanism for public advice and comment to the collection and analytical agencies.
- F. A control agency for continual planning and coordination.

The Organization of U.S. Federal Statistics

I. The Decentralized Organization of U.S. Statistical Agencies:

- A. Existing legislation and strengths of the existing system.
- B. Problems which are created.
- C. Need for quality control and limited consolidation.

II. Different Roles and Functions for Statistical Organizations:

- A. A typology of agency by functions and type of organization:
  1. Relate agency to budget functional classification.
  2. Describe agencies in terms of primary (focal agency) or secondary roles (reimbursable programs).
- B. Present roles and missions of major agencies:
  1. Collection agencies.
  2. Analytical agencies.
  3. Statistical support organizations.

- C. Proposed future roles and missions:
  - 1. Collection agencies.
  - 2. Analytical agencies.
  - 3. Statistical support organizations.
- D. Control mechanisms:
  - 1. Congressional oversight.
  - 2. Departmental review.
  - 3. GAO.
  - 4. OMB.

### The State of Statistics by Functional Area

- I. Listing of Functional Areas:
  - A. Labor statistics.
  - B. Prices and price indexes.
  - C. Production and distribution statistics.
  - D. Construction statistics.
  - E. National economic and business financial accounts.
  - F. Energy statistics.
  - G. Environmental statistics.
  - H. Health statistics.
  - I. Population statistics.
  - J. Educational statistics.
  - K. Criminal justice statistics.
  - L. Income maintenance and welfare statistics.
  - M. Housing and community development.
  - N. Income, wealth, and consumption.
  - O. Agricultural commodities.

### II. For Each of the Above, Discussion will Review:

- A. Responsible agencies.
- B. Major user groups, including policy groups.
- C. The basic core program that exists.
- D. Important gaps.
- E. Programs which should be discontinued.
- F. Recommended new programs.

### Crosscutting Issues

- I. The character of crosscutting issues:
  - A. Describe the nature of the issue.
  - B. Identify the agencies and/or programs involved.
  - C. Outline policy recommendations.
  - D. Describe steps to be taken:
    - 1. Program consolidation.
    - 2. New initiatives required.
    - 3. Role of existing or proposed interagency committees, advisory bodies, or research efforts.
    - 4. Outline time frame.

## II. The Specific Issues:

- A. Longitudinal surveys:
  1. Needs for longitudinal data.
  2. Relation to privacy and respondent burden.
  3. Responsibility for design and maintenance of program.
  4. Role of special purpose in multipurpose programs or instruments.
  5. Use of administrative records.
- B. General-purpose sample vehicles:
  1. Statistical methodology.
  2. Role and mission.
  3. Funding (tax on principal agencies -- name them).
- C. Social Indicators:
  1. Relation to the System of Social and Demographic Statistics.
  2. Relation to the Monthly Chartbook.
  3. Periodicity of publication and scope of coverage.
- D. Civil rights data:
  1. Conceptual issues in measuring discrimination.
  2. Level of detail needed (ethnic group, geography, etc.).
  3. Relation to administrative records.
- E. Professional staff training:
  1. Type of needs in agencies.
  2. Relation to existing intramural and extramural programs.
  3. Interagency transfers.
- F. Confidentiality:
  1. Problems with existing laws, rules, and regulations.
  2. Needed legislation.
  3. Organizational implications.
  4. Relation to sample design and Industrial Directory.
- G. Standard Industrial Directory:
  1. Goals and objectives of present program.
  2. Needed legislation.
  3. Role of Directory in programs of various agencies.
- H. Reporting burden:
  1. Definition of burden associated with general-purpose statistics.
  2. Relation to recommendations of the Commission on Federal Paperwork.
  3. Relation to other portions of the Plan.
- I. Longrun growth models:
  1. Description of agency programs.
  2. Needs for standardized data inputs.
  3. Relation to existing data programs.
- J. International statistics and technical assistance:
  1. Role of agencies in international programs.
  2. Longrun funding for technical assistance.
  3. Relation to multinational programs for data standardization and data improvement.
- K. Interagency (reimbursable) funding:
  1. Analysis of the concept of sponsoring agency responsibility.
  2. Mechanisms for multiagency funding.
  3. Relation of reimbursable funding to primary agency role and mission.

- L. User access-data banks:
  - 1. Description of agency programs.
  - 2. Role of public-use tapes.
  - 3. Transfer of data among agencies.
  - 4. Relation to confidentiality.
  - 5. Needs for computer systems.
- M. A program of standards development:
  - 1. A standard stub of survey classifications.
  - 2. Occupations classifications.
  - 3. Industry classifications.
  - 4. Commodity classifications.
  - 5. Presentation standards.
  - 6. Timeliness.
  - 7. Public-use samples.
  - 8. Quality controls.
- N. The Federal-State cooperative systems of data collection:
  - 1. Limits of Federal responsibility.
  - 2. Standards.
  - 3. Division of labor.
  - 4. Technical assistance.

#### Evolution of the Statistical Plan for the 1980's:

- I. Nature of Statistical Programs in a Dynamic, Complex Society:
  - A. Needs for historical continuity.
  - B. Needs for new concepts.
  - C. Problem anticipation.
  - D. Conflicts in values -- burden vs. information, privacy vs. exchange, needs vs. resources, etc.
- II. An Overview of Proposals for Agency Roles, New General-Purpose Programs, and Solution of Crosscutting Issues:
  - A. How the parts of the Plan interact.
  - B. Recommended sequence of actions.
- III. A Program of Research and Review:
  - A. Unemployment concepts.
  - B. National Income Accounting concepts.
  - C. System of Social and Demographic Statistics.
  - D. Financial statistics.
  - E. International trade statistics.
  - F. Balance of Payments and international finance.
  - G. Others.

#### Appendix A

Historical Review of the Statistical Budget -- Focus on 1970-1977.

#### Appendix B

Agency Roles in Functional Areas.

Appendix C

The 1977 Statistical Budget by Major Program -- Exhibit 54's.

Bibliography

Key reports and plans like the Health Data Plan, the Common Core of Education Data, and the Report of the Federal Council on the 1980 Census.

Mrs. SCHROEDER. Let me ask some questions that I foresee from looking at your statement.

You say that you have been able to cut back the number of forms as per the President's directive of March 1?

Mr. O'NEILL. Yes.

Mrs. SCHROEDER. How many forms have you cut back, and in what period of time?

Mr. O'NEILL. About 250 from a starting point, as I recall, of 5,250, from a starting point last July 1st.

Mr. DUNCAN. The President is using 5,200 as of July 1975. The official reference date for the OMB directive is October 31, 1975. We have 375 reports to go to meet the President's 10-percent reduction goal.

Mrs. SCHROEDER. How were you able to cut back that many forms in this short period of time?

Mr. O'NEILL. Well, frankly, I think by having the backing of the President—not just the backing, but with the very strong urging of the President, the executive branch is making a dedicated effort to reduce the amount of information burden that we are collectively placing on individual citizens, businesses and the public, as well as other public and private institutions.

This presidential directive is significantly coupled with a general change in attitude, which I perceive among the executive branch departments and agencies. Further I think this attitude is also evident in regulatory agencies.

It is my observation that executive branch departments and agencies and the independent regulatory agencies do what they perceive is expected of them by the general public, by the Congress, and over the last year and a half or so, by the strong pressure that the President has brought to bear on the theme of governmental deregulation. I think it's been reinforced by many Members of Congress. People are beginning to review much more seriously what they are doing and what the impacts are of what they have been doing.

I think that accounts for the fact that we have been able to make some reductions.

I think it will insure that we will continue to make reductions; and to make more sensible what we are doing in a collective sense through all of these information systems.

Mrs. SCHROEDER. My understanding was that Mr. Ford's approach, going for a percent cut in the number of forms did not apply to regulatory agencies.

Mr. O'NEILL. That's true. But I was expanding my comment to say that, while we do not have a direct ability to say to the independent regulatory commissions and agencies, "you will do this," there is a general thrust, certainly, in the executive branch and in the Congress, to make the regulatory commissions more mindful of the kind of burden they are placing on the groups that they deal with.

You probably recall that last fall the President met with the heads of the independent regulatory commissions and talked with them about regulation and about paperwork burden and reporting burden. I think that showing of Presidential interest has had a useful effect.

As a matter of fact, the President is meeting again this afternoon with those same independent regulatory agency chairmen to review

with them what they have accomplished and what their plans are for the future.

Mrs. SCHROEDER. Well, it is my understanding that GAO has said, in looking at those agencies, that actually the regulatory agencies have increased the paperwork burden in that period of time, in the last 6 months.

Mr. O'NEILL. I haven't seen that GAO report. I'd be very interested in seeing it.

My impression comes from a few select agencies. For example in the Civil Aeronautics Board, Chairman Robson has really been making a dedicated effort to reduce the reporting burden. As a matter of fact, his counsel, Howard Cohen, came by yesterday to see me for a few minutes and told me a statistic—if I remember it correctly—that, as a result of actions they have taken in the last 6 months, they have reduced some 26,000 report requirements that existed until they took these actions.

Now, that's only an illustration. I do not have in my head a complete review of what the independent regulatory agencies have done, but I'd be very interested in looking at the GAO report.

Mrs. SCHROEDER. The GAO report says that in the last 6 months the burden increased, rather than decreased.

Mr. O'NEILL. I should emphasize that the President's program is directed to those agencies in our direct control.

Mrs. SCHROEDER. When you went after the 250, how did you look at them? Did you look at the scope of each of the forms? How many people they affected? Have you gotten any reading on the burdens that those forms imposed?

In other words, it could be a form that went to five people. It could be a form that went to 5,000,000 people. Just cutting back the number of forms really is not too impressive without knowing how many people they affected.

Mr. O'NEILL. Let me ask Dr. Duncan to respond to the technical side of your question. But I think your notion is absolutely right. Just simply reducing the number of forms, either through consolidating or eliminating those forms that go to a fairly small clientele is not what the President had in mind. He had in mind a combination of reduction of absolute numbers of forms and of the burden that is placed on the public that we are asking to fill out all these various forms.

As a matter of fact, I recall discussing this very problem with him shortly after he set this goal. He agreed if we weren't careful, we could find ourselves in the situation where we accomplished the goal of reducing the number of forms, and wouldn't have really accomplished very much by way of reducing burden.

And his response to that was, "If you think that's a serious concern, you tell me what the burden measure is and I will put a burden measure control on it, too."

So the President is dead serious that we reduce the burden in real terms. For the time being, at least, he has limited himself to a goal relative to the total number of forms, but he has expected us and the agencies to respond to him both in terms of the numbers of forms that have been reduced and the burden implications of those reductions.

Let me ask Dr. Duncan to respond more specifically to your question about the review procedure.



Dr. DUNCAN. The relationship between burden and number of forms is obviously a complicated relationship. First of all, how do you really measure burden?

What we rely upon are the agency determinations as to how much time it will take to complete the report. If, during our review process, the agency estimate appears to us to be unreasonable, we ask for a re-estimation.

We have had a couple of cases where we have called for re-estimation which I can insert for the record, if you would like.

Our problem, however, in dealing with reporting burden overall is that there are a number of reporting requirements imposed on the system by laws passed by the Congress. For example, even though we reduced the number of reports in the last half of 1975, the total reporting burden was greater at the end of last year than it was at the end of 1974.

One report alone, the Real Estate Settlement Procedures Act, accounted for all of the growth. As a single reporting requirement, this added four million manhours of reporting burden.

During 1975 the total number of reports declined by 142, but we were forced to approve one report that was required by the Congress.

We are facing the same problematical situation this year as well, because of new laws that are coming into being.

What we are doing in this first effort to meet the President's goal of a 10-percent reduction in the number of forms is insuring that the agencies carefully review their entire inventory to identify potential sources for reducing reporting burden.

When the 10-percent goal has been achieved, we plan to take the reporting burden measures that we have—the number of respondents and the number of manhours required to respond to each reporting requirement—and then to selectively go into the agencies where there is heavy reporting burden to determine how to reduce total reporting burden.

We think it would be unrealistic to force those agencies which have done a good job of keeping their burden down to respond to some arbitrary across-the-board rule. We are looking at this first phase to give us a good picture as to where the fat is in the system.

Your committee is specifically interested. I know, in statistical reports. Statistical reports account for nearly 20 percent of the inventory in terms of number of forms. In terms of burden, they account for 8 percent of the burden, as our figures reflect it.

So I think, as we move into phase 2, we are going to find much greater impact on the data collection connected with administrative procedures and recordkeeping requirements than in some of the statistics agencies. I am not saying that the statistical agencies will be free from review, but if you look at reporting burden in total, you must impact on the 92 percent of the burden that is not statistical in nature.

Mrs. SCHROEDER. So you really haven't measured the burden yet. Are you anticipating doing that?

Dr. DUNCAN. We do have ongoing summary measures of reporting burden. The measure of burden is a difficult task. We don't audit the estimates by going out and seeing how long it takes people to com-

plete forms, nor are we able to discriminate between records a company maintains to meet governmental requirements as opposed to records a business maintains in order to properly manage its own affairs.

Mrs. SCHROEDER. I think you testified that you are now relying on the reporting burden that is assigned to the form by the Agency. You do not have an independent evaluation of that as yet, but are you hoping to move that way?

Dr. DUNCAN. We review the Agency estimates, if it looks unreasonable. For example, if the Agency estimates 20 minutes for a 45-page form we question that estimate.

Mrs. SCHROEDER. Thus, it has to be a rough estimate.

Dr. DUNCAN. Yes; many of the estimates are difficult to analyze without literally sitting down with the comptroller of the firm and seeing how he completes the report.

Mrs. SCHROEDER. So you are not using any very scientific methods at this point?

Mr. O'NEILL. I think the answer to that is no.

Mrs. SCHROEDER. I also wanted to ask you, then, on that basis, how can you tell, when you ask the Agency heads to cut back the amount of paperwork, that they didn't just consolidate a couple of forms? In other words, if I were an agency head, and I wanted to look good really fast, you could just slap a couple of them together and put another sheet on the back.

Or do you doublecheck the reduction? Do you have any means of going through them, question by question, to make sure the same question isn't being asked on 84 forms? Or that there isn't a tremendous consolidation of forms that has taken place, so that the burden really has stayed the same, but the number of forms is less?

Dr. DUNCAN. In the questions that you submitted to us, our answer to question No. 13 outlines the review process. We do review all the data items.

So if an agency tries to consolidate two forms and come to us with one, we will immediately catch it.

Mrs. SCHROEDER. How can you catch it?

Dr. DUNCAN. Because we review the questions in the new form. We have the dockets on the old forms, and it's very easy for us to compare what we have in our files with what they have resubmitted.

Mrs. SCHROEDER. How many forms do you have, totally, for all these agencies? How many forms are there that you are overseeing?

Dr. DUNCAN. At the end of March, the inventory was 5,012.

Mrs. SCHROEDER. How many people do you have overseeing these forms in your group?

Mr. O'NEILL. The total number of full-time permanent staff now working in the Statistical Policy Division is 29. In addition because of some special burdens, we have in effect, transferred one other individual on a full-time basis and have made available two other individuals on a full-time basis for a short-term assignment.

So, in total, counting those special assignments, we now have 32 people working in these areas.

Mrs. SCHROEDER. How many of those are professionals and how many are clerical?

Mr. O'NEILL. Seventeen are professionals and 3 provide technical support. But I think you raise an important point as to how many people really ought to be considered in the Office of Management and Budget to be working on these kinds of questions, and I think if you understand how we are organized, and how Dr. Duncan's work is staffed throughout OMB, you will see that, in fact, the number of people in terms of person hours that are applied to these functions is considerably greater.

As new forms come in, or extensions or revisions are proposed, they are staffed out to the budget examining divisions that have oversight responsibility, let us say, for health programs. They are expected to make an analysis of the usefulness of the data from a programmatic point of view, to help in assessing whether or not there is an overlap between the data that is proposed to be collected from these forms, and also to make similar kinds of judgments. In effect, the Budget Examining Divisions provide staff support to Dr. Duncan's people.

Thus while the group assigned organizationally to the Statistical Policy Division is 29 or 32, as I have indicated to you, the reach of the Division is greater than that number.

Mrs. SCHROEDER. But the real people under your command and control, is 32, at this point?

Mr. O'NEILL. Under Dr. Duncan's control.

In the Office of Management and Budget, we have something over 600 total staff people, and 424 of those are professional staff.

Mrs. SCHROEDER. But they have other primary assignments?

Mr. O'NEILL. Absolutely. They certainly do.

Mrs. SCHROEDER. So what is the average—have you got any idea what the average number of pages there are, or the average number of questions there are on each of these 5,000-some odd forms that you oversee.

Mr. O'NEILL. No.

Mrs. SCHROEDER. But you have 17 professionals overseeing over 5,000 forms?

Mr. O'NEILL. I guess I'm not ready to say yes to that, because I think the impact of the staff support that is provided by other divisions that are not directly under Dr. Duncan's control really expands those resources. So that, in effect, while in a narrow sense you can say yes, there are only 17 professional people working in this area; indeed the number is much greater than that.

Mrs. SCHROEDER. But let me ask some other questions about that, though.

From the statistics we have here, in the last 30 years, that staff has declined by 58 percent and the number of forms have increased phenomenally. And my question is, are people that much more efficient, or has this review process just been grossly understaffed?

Is that part of why the paperwork burden has become phenomenal, that you just don't have the number of people to oversee it?

Mr. O'NEILL. No. I think the statistics hide an important change in the Executive Office of the President. And I think I can examine it for you by going to another area.

Until about 1960, the Office of Management and Budget—and the numbers in our table provided indicate in that year it had 422 people. And of those 422, about 45 of them were assigned to health activities.

Those 45 people included a fairly sizable staff of architects and engineers. Their responsibility was to review every new hospital design that the Federal Government was undertaking in the Defense Department, the Veterans' Administration and the Public Health Service. In effect they decided how many feet there should be between a bed and a wall, and how many wall outlets there should be.

Today, I believe we have seven people working in the health area, in spite of the fact that over the last 16 years the health budget of the Federal Government has grown from, I suppose, \$2 billion, counting all of the Defense, Veterans', and public assistance activities, to something like \$45 billion.

What has happened in that area is that the role of the Officer of Management and Budget has changed in a very decided way. The architectural and engineering work is no longer done in OMB. Those functions are handled by the responsible departments and agencies.

Our seven core people work on policy questions.

Frankly, in an area like that, I think back in the old days before 1960, policy areas were more often neglected or not addressed by that staff, even though the staff was larger.

The same thing has happened in the Statistical Policy Division. While the absolute numbers have been about the same since 1960, with ups and downs from 29 in 1968 to 35 in 1972, and down to 26 in 1974, the role of the Statistical Policy Division has changed.

I believe today we are concentrating on those things that really ought to be done in the Executive Office of the President, given the change in the shape of Government that has occurred over the last 25 or 30 years.

I believe we are now focusing our resources in the Statistical Policy Division on policy questions. We are doing much less on the purely technical level than we did, say, in 1947, when we had 69 people working on this function. At that time we were assuming a greater responsibility for things that were really not policy questions.

Mrs. SCHROEDER. Dr. Duncan, in your group that you oversee of 32, the Statistical Policy Division, what are you supposed to do in that agency? I know you oversee the forms and that's what we are talking about today, but what else do you do? And could you allocate the time spent by that group of 17 professionals?

Dr. DUNCAN. We have two basic legislative authorities. The first is the Federal Reports Act of 1942, which relates directly to the review of information requests from the executive branch which go to 10 or more people. Single person requests are not reviewed by our office.

The second legislative responsibility we have is section 103 of the Budget and Accounting Procedures Act, which gives us the responsibility to plan and coordinate the Federal statistical system; to play the role of the central statistical office of the United States in its highly decentralized system.

Mrs. SCHROEDER. So that agencies would advise you of what they are planning to do, and you would be involved in the planning stage?

Dr. DUNCAN. Yes. We particularly concentrate on two kinds of coordinating activities. Those statistical programs that are general purpose in nature, and cut across many agencies, or those statistical programs that are very expensive to undertake and have a high budget impact.

We work with the budget examiners, for example, in reviewing the budgets of the individual statistical agencies. The budget examiners have the ultimate responsibility, but we advise as to the procedures and the utility of the collection efforts.

Under the Federal Reports Act, if I might come back to that, you indicated that the number of reports has increased dramatically.

Actually, the total inventory of public use forms in 1942, when the act was passed, was about 5,600; by the end of World War II, it had grown to over 6,000.

So, in fact, since the end of World War II to date, the total number of reports in the inventory has declined.

Mrs. SCHROEDER. Except that we are not talking about the complexity of the burden, which then gives an entirely different picture, according to our calculations.

Dr. DUNCAN. That's correct. Another way to look at that is to consider what do we review in a given year. We don't review the entire inventory every year. We review the requests for extensions of ongoing reports, or for single time reports; specific surveys to answer particular questions, for example.

Mrs. SCHROEDER. How many requests did you turn down last year?

Dr. DUNCAN. We have a table on page 20 of our questions and answers, which gives the approved or disapproved reports. We disapprove very few reports, according to these statistics, because our operation involves working with the agency when they have a submission to us, to see if we can resolve the issues presented by their submission.

For example, if they are proposing a full count and we believe a sample might do the job, the agency may change its procedure, reducing the reporting burden in the process. However, our reports will show only that their request was approved.

There are other cases where the questions we raise reflect difficulties with which the agency concurs; the result is that the agency withdraws the request.

So I don't actually have a count as to what man-hours of reporting burden we reduced by our efforts. We do not keep records in that form.

But during last year, as you will see in the answer to question 16, nearly 2,000 of our requests for review were repetitive reports almost two-thirds of which we had reviewed previously. We were primarily concerned with questions such as, does the need continue, have the forms been improved to meet the earlier deficiencies, and is the effort still justified?

About 930 were single time reports which we had to review from beginning to end. We had to examine why is the information being collected, how will it be used, and are appropriate procedures to be used?

So that results in a total effort that is much less demanding than is implied by the total inventory.

Let me answer your question about our functional time allocation. We don't keep a daily clock on each of our staff members. But there is an important intersection between the responsibilities of planning and coordination and reviewing reports.

Actually, before the Federal Reports Act was passed, the predecessor agency to my office—the Central Statistical Board—reviewed

reporting requests simply to find out what various agencies were collecting, so that the statistical system could be improved by coordination among the various agencies.

Thus under our planning and coordination responsibility, we find it very useful to review individual reports, to meet with interagency task groups, to expand or change the character of certain inquiries so they will be more useful to the Federal Government as a whole.

Therefore, it's literally impossible to draw a fine line between those two responsibilities.

But in terms of time allocations, we have asked our staff to estimate how they spend their time. We estimate somewhere between 30 and 40 percent of our professional staff time is spent reviewing forms; another 30 to 40 percent on matters of planning and coordination; and the remainder on miscellaneous activities in areas such as reviewing legislation in terms of statistical impact, working with budget examiners on significant budget issues, and related matters.

We also serve as the central statistical office of the United States, responding to requests for information from international organizations. I presently handle that responsibility with a consultant, part time, 2 days a week.

Mrs. SCHROEDER. On your planning and coordination, can you think of anything that you have done that was at all innovative in attempting to bring some of these agencies together in the last year or so?

Let me back up and say, we have had a lot of testimony about the 55 agencies out running around doing all sorts of things, and really kind of overlapping.

So I am led to comment that I know you are saying that you are adequately staffed, but I really find it kind of incredible to think that what we are really talking about when you break out the time is about seven professionals working on this all year round.

I don't foresee how they can do that. Now, I also heard you say the White House has taken over some of this, so therefore we shouldn't be concerned about the 58 percent decrease, even though the forms are increasing in complexity and diversity, and thus needing more planning and more oversight.

Who is doing this in the White House? And how many people in the Executive Office are working on this?

Mr. O'NEILL. If you understood me to say the White House is doing this, it's incorrect, and I'm sorry I left that impression.

As you probably know, Dr. Duncan has undertaken with his "Framework for U.S. Federal Statistics" a major innovation in trying to deal with the problems of coordination of Federal statistical efforts. You may want to hear more from him as to what he is doing in that innovation.

But more directly on your question as to whether or not we need more resources, it's my own belief that we do have an adequate amount of resources to do our job in a good and credible way.

Part of the reason for that is that the quality of the people we have in the Office of Management and Budget is very high. Their willingness to work 12 hour days, if need be, seven days a week, I think is unmatched by any other agency of Government.

So our people are willing to work very, very hard in order to carry out their responsibilities, and I think it's fair to say that almost with-

out exception, our people work very hard for very long hours with a very high level of skill. That, in part, accounts for the fact that we are able to get a lot of product out of the relatively small sized staff (600 people) that we have.

I would say, further, that from a policy point of view, I am convinced that if we were to enlarge our staff significantly above the level that it is, we would lose one of our most important characteristics. We are still small enough so that we can talk to each other internally, and, as a general matter, have very good cross communications within the agency.

We are not like most departments and agencies of Government which have grown so large that they need coordinating staffs just to keep each other advised as to what it is they are trying to accomplish.

We have debated, over the years that I have been in OMB (going back to January 1967) this very question as to whether or not we ought not to have a much larger staff. It has been my continuing opinion that we would do ourselves great damage if we were to try to grow appreciably above the 600 personnel level we now have.

So I have personally resisted any addition to the staff.

As a secondary matter, I think it's very important that the Executive Office of the President, and especially the President's Office of Management and Budget, show the way in trying to economize in Government operations. It would be very simple to go to the President and tell him we need 1,000 people, and I think he would probably take our judgment and say, all right, you can have 1,000 people.

But I think it's important that, if we are going to be insisting that departments and agencies run economical, efficient, lean operations, that place a minimum amount of burden on the Federal taxpayer, that we owe it both to that general public and to the departments and agencies to show the way, and, to ourselves, to make priority judgments about allocations of staff.

Mrs. SCHROEDER. Well, I hear what you are saying, but I think it's incredible. I mean, you are saying on the one hand that the rest of the Government has grown by leaps and bounds, so you must remain small to set an example for them.

It sounds good, except that you are charged with coordinating and overseeing them, and they are getting bigger and bigger, and you are trying to get smaller and smaller. So either you are not doing your job, or the example isn't getting through, or something is amiss.

I guess I'm a little surprised that I hear you both saying that you really think you are coming to terms with the paperwork mandate, that you don't need new people, that you are coordinating everything fine, and the prior witnesses we have had that are complaining don't really know how good it is.

Is that what I hear you saying?

Mr. O'NEILL. Well, no, I don't think so. I would characterize it a different way.

What I am saying is this: That I think, just on the grounds that you suggest, it would be very easy to say Federal employment as a general matter has grown by  $x$ , and there ought to be a derivative relationship in the Office of Management and Budget; we ought to multiply the number of people by the  $x$  factor, and have that many people.



What I am saying is this: Rather than accept that approach we are spending our energies, and the President is spending his energies, trying to solve the problems of a Government grown too big and unwieldy.

This is a little chart which I'd be happy to give you, if you would like to put it in the record. This shows the education programs in the Office of Education, just for those programs that the President has recommended be put into one block grant.

This is part of the problem. That's for education. And it's not a limited example. This is health. And child nutrition is just as bad.

What the Office of Management and Budget is trying to do—

Mrs. SCHROEDER. Is coordinate?

Mr. O'NEILL. No. Rather than give in to the fact that we have got the most incredible mess of programs and laws on the books that the mind of man could create, we are trying to do something about that. I think you know the statistical area is not alone. You may know that, 2 years ago. Congress passed the so-called Federal Advisory Committee Act, and gave the OMB the responsibility of looking at every advisory committee and making recommendations as to whether or not they ought to be continued.

I think we have been doing a reasonably good job in reducing the number of advisory committees that are subject to Executive direction, but frankly, if I may say so, we are fighting an uphill battle, because the Congress is adding advisory committees by statute faster than we can stop them.

I was struck, in looking at some of the earlier testimony this committee has heard, to see for example the form that is required to be filled out by every community that is receiving funds under the community development block grant, under a mandate from Congress.

It was not in the administration's proposed legislation. We are frankly, I think, drowning in legislative mandates for advisory committees and for statistical surveys.

Others that come to mind are the ones that were discussed in another witness' testimony on education surveys that were mandated by law.

Similarly, in legislation authorizing or requiring research programs, demonstration programs, training programs, in fact in most domestic legislation these days, there seems to be a boilerplate factory that is producing statistical requirements, survey requirements, research requirements, training requirements, demonstration requirements, and advisory committee requirements. The administration can't do anything, but try to cope.

Mrs. SCHROEDER. I would agree. But a lot is also coming from internal regulations from the agencies. I am planning to introduce a bill to require that any bill that comes in front of the Congress must have a statistical data impact printed on the front of it which would stop a lot of that on our side. And I assume that you would support something like that, because at least the Members would know what is in it when they vote.

Mr. O'NEILL. Well, I don't know. I think we'd want to take a careful look at it.

But let me give you a kind of quick reaction. We now have inflationary impact statements, and environmental impact statements.



There's a recent development in both Houses of Congress to require evaluation of zero base budgeting.

It seems to me that we are all hitting at the same basic thrust. But I'm concerned that we are going to end up with so many impact statements we are going to find ourselves strangled with our own impact requirements.

Mrs. SCHROEDER. But then, how do we find out, when the Congress passes a bill, what the impact of statistical reporting is going to be on that bill? I mean, you are complaining about it, but you are saying don't put anything on the front to show it.

Mr. O'NEILL. No; I'm not saying that. As I say, we would want to take a careful look at such a legislative proposal before we took a formal position.

But what I am saying is this. I don't believe we are ever going to successfully cope with the kind of problems I think you are interested in unless we do something about this mess that we have in the programs themselves.

You know, it's kind of equivalent to having—I said this the other day to Senator Childs in a hearing on a related subject—this whole business is kind of equivalent to having somebody put a 10-story building on your foot; rather than getting it off, we are negotiating how often the window washers are going to come. We are not working on the basic problem. We are trying to coordinate a mess.

Mrs. SCHROEDER. But, as I see it, you are the Government managers, and you have had 8 years to manage. You are in charge of statistical planning, and of coordination. I agree fully that just because the rest of Government has grown by 15 percent, you should not automatically grow by 15 percent—but I am also saying that because programs are growing by 15 percent, the planning and coordination problems are increasing. Order is not happening. Everybody stands in a circle and points to the next guy and says it's his fault. Where does it end?

It may be unfortunate to point to OMB, but supposedly you are the managers, the professionals; and supposedly outside this whole rhetoric milieu between the executive and legislative branches, and I don't see the problems lessening.

Dr. DUNCAN. May I interject something to turn this around to your basic question on what are the innovations in the last year or so, and perhaps put a little more optimistic light on this discussion than occurs by looking over the long stream of history.

I have only been associated with OMB for a little over 2 years. But in that period of time, our staff has grown, in effective terms, from 25 people, since one of the people listed in the table was on leave, to a point where we will soon have 32 available to us.

So in this very short period of time, there has been a growth in resources which we have to deal with some of these important issues.

And in the time of this growth, I would call your attention to three very specific, concrete developments that have occurred.

The first is the Federal Interagency Council on the 1980 census in which our office brought together 90 Federal agencies. We staffed a series of nine task groups looking at functional data requirements in areas such as health, education, disability, and so forth, to determine what changes, if any, should be made to the 1980 census to meet the data needs of these varying agencies.

Obviously, the sum total of this demand exceeds what one can do in a census. But by looking across the board in depth, you can make useful judgments about what the priority items are.

That material is now being reviewed by the Census Bureau. I would emphasize that that total effort involved dozens of people from dozens of agencies, and helped us do our job of planning and coordination very effectively.

The second example I would give you is a program we have been putting together, at the President's direction, to create a monthly report from the Federal statistical system that, in chart form, depicts what is happening to the domestic society in the United States.

It has economic series and social series of various types, brought together for the first time in one place in highly readable form. Thus the layman, the nonstatistician, can understand what is happening to the world around him and put it in some perspective in terms of looking at various time series.

That effort also has been coordinated by our office. It has involved a series of five task forces from all of the agencies that produce statistics. It has involved representatives of the President and Vice President in terms of what kind of series are useful for policy needs. I have also talked to some Members of Congress in the process, and, have used the device of interagency committees.

We have been able to extend our resources and coordinate the program very effectively. There will soon be a prototype of that publication coming out, and we would like to get your comments on that prototype before it is finalized late this year.

Additionally, I would like to emphasize what is presently an unfinished product. For a year and a half, we have been undertaking, for the first time on a totally comprehensive basis, a planning program for statistics. Mr. O'Neill's testimony includes the outline for that report, and some of the questions that we answered refer to the outline.

This effort, once again, if you look particularly at the beginning section of the document, outlines what we see as the function of planning and the process of planning; it's a program that has a significant input from agencies and from the public.

We are particularly eager to work with groups like the Committee on National Statistics of the National Academy of Sciences, the Federal Statistics Users Conference, the American Statistical Association, and other groups in functional areas such as education.

For example, we have had frequent meetings in the past year with the Council of Chief State School Officers, which represents the primary respondents to the Federal Government's request for information in the education area.

What I am really suggesting, then, is that we have increased resources applied to planning and coordination of Federal statistics. We have introduced some fairly significant crosscutting programs, and I think we are going to soon have some significant impact on statistical organizations and the productivity of statistics in terms of integrating the system, which today is quite fragmented and highly decentralized.

The tools for doing that, however, require a long gestation period. To get really good statistics, we need to have adequate standards and

procedures, common concepts and classifications. The development of these takes a long period of time. It took nearly 30 years to develop the standard industrial classification system, I trust we can beat that time frame, but we need classifications in areas such as commodities and occupation.

As standards are developed and statistical programs get integrated, we will all obtain better quality data.

Thus a number of things are underway now to lead in that general direction.

Mrs. SCHROEDER. I appreciate that, Dr. Duncan, and I know you have been working. As I say, the thing that concerns me is, while you add 3 people, others add 60.

You mentioned the census—this committee just passed the mid-decade census bill because we feel that might be a way to consolidate an incredible number of now-current demands that are being made by different agencies for all sorts of different information.

How would you look upon the mid-decade census in this overall purview of it being a base around which to coordinate things?

Mr. O'NEILL. I haven't yet seen the floor discussion that took place yesterday, and therefore I am not sure what was said. I'm also not sure of the import of the amendments added on the floor.

But it's been our view on the draft of the legislation, and the legislative report out of this committee, as we understood it, that it is important to provide flexibility. We see a mid-decade statistical effort as an opportunity to accomplish significant consolidation to reduce statistical burden.

Thus we are very interested in that kind of an approach.

Mrs. SCHROEDER. How many of the 17 professionals are women?

Dr. DUNCAN. Four.

Mrs. SCHROEDER. I will be spending more time on these issues, now that the chaos has ended on the floor, hopefully, and I will be looking over these answers a little more carefully. We may get back to you with written correspondence.

I thank you very much for your patience and your time.

Mr. O'NEILL. Thank you very much.

Mrs. SCHROEDER. The subcommittee will now adjourn.

[Whereupon, at 11:00 a.m., the hearing was adjourned.]

[The material which follows was received by the subcommittee for inclusion in the record.]

FIRST NATIONAL CITY BANK,  
New York, N.Y., April 7, 1976.

HON. PATRICIA SCHROEDER,

*Chairwoman, Subcommittee on Census and Population, Committee on Post Office and Civil Service, U.S. House of Representatives, Washington, D.C.*

DEAR Ms. SCHROEDER: In connection with the hearings which your subcommittee has been holding on "the need for increased coordination and planning within the federal statistical system," it has been suggested to me that a paper I prepared last year on the timeliness of federal statistics might be of interest. A copy of this paper, which was presented at the annual meetings of the American Statistical Association in Atlanta last August, is enclosed.

I have been a close observer of the federal statistical system for many years, not only in my job as economist for Citibank, but also as trustee and former chairman of the Federal Statistics Users' Conference and a member of the American Statistical Association's Census Advisory Committee. Broadly speaking, the statistical agencies have been doing a conscientious and thorough job of bringing out as timely, accurate, and comprehensive statistics on our economy

as available money and manpower permit. Congress and the Administration have generously allocated additional funds for augmenting statistical programs in recent years. The system is not perfect—statistical gaps persist and the series on prices and unemployment need a thorough review—but it is still one of the best government statistics systems in the world.

The critical problem today is not in the collection and analysis of statistical information but in its dissemination. The most widespread source of dissatisfaction among users of federal statistics today is with the long delays, inflated prices, and unresponsive attitude of the Government Printing Office. Economic information is a highly perishable commodity, and its usefulness is impaired by the delays—often a month or more—between the official release of data and the time when it is received through the GPO and the Postal System. This either necessitates costly alternative means of obtaining data (through long-distance telephone, computer data bank, or private expediting service) or means that decisions are made without the benefit of data that have already been released. The GPO's subscription service is the source of numerous complaints; not only are there delays of many months, frequent errors, and unnecessary red tape, but there is complete frustration in trying to get these complaints corrected. Prices of publication have risen far out of line with the general inflation of printing costs; one leading government publication has calculated that the GPO is charging the public more than three times the actual cost of printing and distributing its periodical.

Since the Government Printing Office is directly responsible to Congress, I feel that a review of the timeliness of the dissemination of government statistics should be a part of your investigation.

Very truly yours,

ROBERT E. LEWIS,  
Vice President.

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THE TIMELINESS OF ECONOMIC DATA FOR FORECASTING—FROM  
A BUSINESS USER'S VIEW

(By Robert E. Lewis, Citibank, New York)

How satisfactory is the U.S. statistical system in providing timely, accurate information to business users? In terms of timeliness, the statistics available to the U.S. business analyst are far more up-to-date than those of practically any other major industrial nation. Yet that doesn't mean that they are perfect. Back in 1965, Raymond Bowman of the Office of Statistical Standards, who probably knew government statistics as well as any person at that time, in commenting on a Joint Economic Committee inquiry into "Improved Statistics for Economic Growth," declared, ". . . our present Federal statistical system, which is probably the best in the world, is not good enough." Ten years later, that statement is still as true and as relevant as ever.

Particularly in respect to timeliness, the most remarkable feature of the past ten years is how little things have changed. This was supposed to be the era in which electronic data processing transformed information gathering and speeded it to management almost instantaneously. That golden age has not yet dawned. Internally, many firms have made great strides in their management information systems during the past decade. As far as the Federal government is concerned, however, the timing of the *release* of statistical information is not too greatly different from what it was ten or twenty years ago. The timing of the availability of this information in *hard copy* is, generally speaking, substantially inferior.

I speak with some confidence on this point because throughout the Fifties and Sixties I was responsible for writing a monthly article on current business conditions with an inflexible end-of-month deadline. Needless to say, I was acutely aware of any changes in the timing of statistical release dates. Comparing the present day schedule with that period, some series appear to be coming out earlier (average hours worked and the consumer price index, for example), some are later (such as business inventories and consumer credit), and some have vanished completely (like the weekly wholesale price index and the consumer buying expectations survey). Over all, the age of the computer has not revolutionized the availability of business statistics. At the same time, it should be noted that in an increasingly complex (and occasionally chaotic) economy, there has been remarkably little slippage in terms of release dates.

To test my rather arbitrary judgment, I asked John Aiken, the executive director of the Federal Statistics Users' Conference, to conduct a survey on the question of timeliness. He did an excellent job in a limited time. The final report will be published in the FSUC's newsletter, but some preliminary results are shown in Exhibit I.

Let me put forth a disclaimer at the very outset. This survey was basically an attempt to bring forth an expression of opinion; it was not a scientific sampling of all statistics users—in fact, quite the opposite. The questionnaire was sent to members and newsletter subscribers of FSUC, who are almost by definition heavy users of Federal statistics and sincerely concerned about what is happening to them. Undoubtedly, persons who had gripes about the timeliness of Federal statistics were much more likely to return their questionnaires than those who were satisfied. So keep that in mind when you listen to the results. Incidentally, by the cutoff date for our preliminary tabulation, we got a response rate of 13% in about 2½ weeks at the height of the vacation season with no follow-up. Replies were received from at least one person in 37% of FSUC's member firms and organizations. This coverage will be substantially improved by the time the final report comes out.

The question of timeliness, as we approached it in this survey, separates itself into three distinct areas:

1. The problem of timely release of current data;
2. The problem of timely release of benchmark statistics, such as censuses, and the adjustment of current statistics to those benchmarks;
3. The problem of distributing statistics to users once they are released.

**I. Current Data**—in other words, the weekly, monthly, and quarterly statistics which are the life's blood of business analysts and forecasters. Response to a broad question on the timeliness of Federal statistics indicated that not much had changed in recent years—about half those responding thought the data were available at about the same time as they were three years earlier, one fourth thought figures were available less promptly, and one fourth said more promptly. Yet when asked, "In your current analysis of forecasting activities do you feel hampered by delays in the availability of specific types of current statistics?" a resounding 77% answered "Yes." In other words, things haven't changed, but that doesn't mean they were satisfactory to begin with.

When asked to be more specific about the types of statistics whose delay hampered them, one quarter to one third of the respondents mentioned retail sales, population, and construction and housing data. Twenty to 25% were hampered by delays in data on employment-unemployment, inventories, and prices. Other series mentioned by more than 10% were profits, foreign trade, production, and GNP.

On the question of why there are delays in receiving statistics, later release dates by the issuing agencies were mentioned by one third of those responding. Because many respondents cited more than one cause, only 22% of the total number of responses blamed later release dates. The other reasons for delay all involved some type of distribution problem. At the risk of impeaching my own survey, my personal feeling is that the agencies are getting a "bum rap." The impression of later releases dates may arise from our cumulative frustration over distribution delays, or from the confusion among some users between the time the data are released by the statistical agencies and the time the Government Printing Office and the U.S. Postal System get around to placing the figures in the hands of the users.

Not content with trusting my memory of how things used to be, I did some checking on the "Schedule of Release Dates for Principal Federal Economic Indicators"—a most useful table published monthly by the Office of Management and Budget in *Statistical Reporter*. Comparing 1970 release dates with those in 1975, I could find no systematic tendency toward later release dates. In fact, the differences caused by the day of the week on which a month started seemed to be the most influential factor in shifting releases to earlier or later dates.

Furthermore, a check by the Office of Management and Budget, provided by Joseph Duncan, Chief Statistician of OMB, showed that, during the years 1972-73-74, among 75 statistical series published by 7 major agencies, 27 series were being released earlier, 32 release dates were unchanged, and 16 series were being released later. That's a slight tilt toward earlier releases, but no landslide.

For the record, I think OMB should be commended for its continued emphasis on Circular No. A-91, which provides guidelines to speed up the release of statistics. The major statistical agencies, too, should be commended for their

efforts in carrying out the provisions of this circular and in faithfully meeting the release date schedules set up under it.

Nevertheless, the point remains that a substantial number of business users of statistics feel that release times are deteriorating. At the very least, this poses a serious public relations problem for the agencies. In addition, there is the question raised earlier: Why, in this age of electronic data processing, hasn't there been some visible improvement?

**II. Benchmark Data**—basically, censuses and other comprehensive compilations of economic data made at annual or longer intervals, sometimes as infrequently as 10 or 12 years. A total of 74% of the respondents reported that their analysis or forecasting activities had been hampered by delays in the availability of detailed benchmark data. Fully half of those experiencing delays cited the Census of Manufactures, while more than a third were hampered by delays in the Census of Population and Housing. A quarter to a third of this group complained about the Consumer Expenditure Survey, Statistics of Income, input-output data, and the Censuses of Construction, Wholesale Trade, and Service Industries.

Here, too, we would need a far more careful review than this survey could provide of the specific types of data utilized and the actual pattern of release dates before putting the blame on the Bureau of the Census. Whatever the cause, however, these problems with benchmark data are very real. A delay in getting current monthly or quarterly statistics can often be resolved by a phone call or the mailing of a Xerox of a data sheet. However, the highly detailed information utilized by most types of market research, corporate planning, and other analysis involving benchmark data can only be obtained from comprehensive sources—printed volumes, computer print-outs or tapes, and the like. Thus, the printing and distribution delays inherent in these massive compilations become an integral and even more pressing part of the timeliness problem.

Within the Government statistical system, delays in availability of benchmark data are compounded by delays in utilizing these figures in making benchmark adjustments to current statistics. Some of these delays are really staggering. The last major benchmark adjustment of the gross national product covered the year 1958 and came out in 1965—a decade ago. This fall, if all goes well, the national income and product accounts will be revised to incorporate 1967 benchmark data. There is probably no more closely watched statistical series in the country than the Consumer Price Index, yet its last benchmark adjustment was to data for 1960-61. It will be close to a year and a half more before the CPI is adjusted to the Consumer Expenditure Survey taken in 1972-74. Population and labor force data are crucial to a number of Federal programs involving the allocation of billions of dollars, yet we are already five years away from the last benchmark with probably another six years to go before we get another, since we missed the opportunity for a Mid-decade Census in 1975.

Such delays are often the result of budget and manpower restraints, and as such are often outside the control of the statistical agency. Other causes include shifting priorities to newer and more attractive programs, opposition to revision by pressure groups, and a concern that too frequent revisions might bring an adverse reaction from users.

Yet from the standpoint of analysis and forecasting, the biases introduced into the relationships between statistical series by uneven or delayed benchmark adjustments may be more serious than a slight delay in the availability of current statistics. Many finely-tuned econometric models rely on variables which have not had a benchmark adjustment in over a decade—or worse yet, on variables some of which have been adjusted recently and some of which have not.

With the updating of the national accounts this fall and, it is sincerely hoped, the publication without undue delay of the historical record of the revisions, the worst of these benchmarking problems will be over. Remember that at the time of the last major GNP revision in 1965, model building was in its infancy. You are going to encounter plenty of weeping and wailing and gnashing of teeth in October, when the econometricians find that their carefully-calculated regressions no longer fit. But that is *not* an argument against benchmark adjustments. Once the relationships are re-established, the result should be much improved simulations and forecasts. The argument is really for prompter and more frequent corrections. Benchmarking is a matter which needs regular review and a higher priority than in the past at the major statistical agencies.

III. *Distribution Problems.* By far the most widespread problems cited by those responding to the questionnaire were those dealing with distribution of the information once it was released. Over three quarters of the persons responding are experiencing delays in receiving statistics, and nine out of ten of those people blame it on slower distribution. Nearly two thirds blame the Government Printing Office; about 40% blame the postal system; some obviously blame both.

Hardly anyone was happy with the service they are getting from the Government Printing Office. Half the respondents thought service had deteriorated during the last three years; in fact, 30% thought service was "much slower." Among the 38% who thought GPO service was "about the same," three out of four characterized the service both then and now as "poor." Even some of those who sensed a slight improvement thought service was still unsatisfactory. No other question drew so many voluntary comments as that on the GPO—some outraged, some vituperative, and some just sad.

To compound the problem, the GPO has been hoisting its prices at the same time that its standards of service have been declining so drastically. The Administration spokesmen who specialize in jawboning private enterprise on price gouging should turn their attention to their own backyard. Increases in subscription prices of several hundred percent have not been uncommon. For example, such a basic statistical tool as the *Survey of Current Business* now costs \$48.30 a year, up 437% since 1972—and it arrives four weeks later than it did then. About 40% of the statistics users surveyed reported that higher GPO prices had meant a reduced flow of statistics available to them in their work.

Incidentally, it is not generally realized that the Government Printing Office is not a part of the Executive Branch. It is instead responsible to Congress. So if you don't like what the GPO has been doing to you (or failing to do for you), don't pick a fight with the statistical agency—write your Congressman! Better yet, write to the Joint Congressional Committee on Printing (Senator Howard W. Cannon, Chairman) which has responsibility for GPO.

One interesting sidelight is how people cope with delays in receiving detailed statistics. To get a detailed component of a figure just released, three out of four persons responding to the FSUC survey telephone the agency involved. One third manage to get the press release. One fifth get the statistics from a computer data bank. Some even bother their local Congressman for essential publications. And about one third wait it out until the publications come in. Obviously, many respondents report using several of these approaches.

But the point is really the appalling amount of economic waste involved in assuring the timely receipt of statistics. Surely there are better uses for all the time spent on the telephone both by researchers and the agency personnel who have to answer these routine requests for numbers. The BLS has to assign 15 persons just to answer phones the day the CPI comes out—and that doesn't count the heavy load on each of its regional offices. Long-distance charges rival publication budgets—a clear case of paying for the same thing twice. It costs several dollars to access a computer data bank and extract just one line of data, yet this is a convenient and reliable source that is being more and more widely utilized. The dilatoriness of Government publication distribution has provided a market for private services, such as Bureau of National Affairs, which for a fee provide material from Washington promptly.

Even if our survey of disgruntled statistics users is discounted as biased, the fact remains that American business has certified the premium it places on timeliness in statistics by its willingness to underwrite the expense of all these costly expedients used by its economists, statisticians, and researchers to stay on top of the data.

IV. *Conclusions.* What is the frustrated data user to do about these distribution delays? At present, about the best you can do is to let your opinions be heard in the proper places. One approach might be to encourage the establishment of a separate printing office for the Executive Branch. The GPO does a good and efficient job for the Legislative Branch which controls its purse-strings; it has done an increasingly expensive and unsatisfactory job for the Executive departments and agencies and for the general public. It is time that both users and producers of statistics get a printing and distribution center more responsive to their needs. Senator Proxmire has suggested that we could allow the agencies to obtain bids for printing and mailing from commercial firms, which might be faster and cheaper than the GPO.



Another approach would be to employ modern technology to a greater degree. It would not appear too difficult to set up a system where by prearrangement a user's computer could access a government computer, retrieve the text and tables of the latest release on GNP or CPI and then print it out for the user. It is now being done with commercial banks; why not eliminate the middleman?

On the problem of timely release of current data, there needs to be a re-examination of priorities. Back in the Fifties, when Arthur Burns was Chairman of the Council of Economic Advisers, considerable progress was made in accelerating the release dates of a number of statistical indicators. Since that time, my undocumented impression is that improving timeliness has taken a back seat to improvements in both the quality and the quantity of Federal statistics. These are laudable and necessary goals. Nevertheless, it is time we took a close look at whether modern data-gathering and data-processing techniques might not make possible some acceleration in release of statistical data.

However, as users of reports from Washington, we have to begin by asking ourselves a couple of questions:

First, are our own organizations doing all they can to speed the flow of reports to Washington? Statistical agencies cannot speed the processing until they have received the raw data, and all too often a firm's comptroller is dragging his feet in reporting corporate data which go into the same national aggregates his economist is dying to get.

Second, and much more important, what sort of a trade off are we as statisticians willing to make between timeliness and accuracy? You seldom get something for nothing in this world, and an earlier release date could very well mean a higher standard error. We tried to get an expression of opinion on this tradeoff in our survey. Interestingly, there was a fairly even split on the question of how much of an increase in the subsequent revision, if any, would be tolerated if it meant speeding up the release of data by one week. For four key series—GNP, retail sales, employment, and production—roughly half the users, or 41 to 53%, were not willing to tolerate any increase in the size of the revision. On the other side of the coin, when asked how much of a delay in release would be tolerated if it meant cutting the average size of the subsequent revision by half, those who would not tolerate any further delay ranged from 36% for GNP to 54% for employment.

Clearly, there is a substantial share of users of current statistics to whom the present mixture of timeliness and accuracy looks about right. Most of the rest would trade off only minor degrees of accuracy to improve timeliness, or vice versa.

We need a similar re-examination of the timeliness of benchmark data and benchmark adjustments. In the last few years, the problem has been complicated by the burdens imposed on the statistical agencies by legislative requirements for new and highly detailed statistics to be used in allocating Federal funds. But I do not think there can be any quarrel with the proposition that such key economic statistics as the GNP and the CPI need to be anchored to a solid statistical benchmark more often than once every ten to fifteen years.

In today's troubled economic climate, both government policy-makers and business decision makers need the best and most up-to-date information possible. It is a false economy to risk making a wrong decision because the basic data are unavailable or delayed. We need to pursue every opportunity that modern technology provides for improving the timeliness of Federal statistics, while maintaining its high levels of quality and comprehensiveness. We have a statistical system that is probably the best in the world—let's make it even better!

#### EXHIBIT I

##### PRELIMINARY REPORT ON FSUC SURVEY REGARDING THE TIMELINESS OF FEDERAL STATISTICS

On July 16, 1975, the Executive Director of the Federal Statistics Users' Conference mailed a two-page questionnaire to 921 statistics users to identify their problems and to ascertain their views regarding the timeliness of Federal statistics. The questionnaire was sent to 681 persons in 197 member organizations of FSUC and to 240 nonmember subscribers to the FSUC Newsletter.

This report provides preliminary results of that survey based on 118 responses received as of August 6, 1975. The 118 answers represent a response



rate of 12.8 percent. Because FSUC is an association of firms and organizations, it is significant to note the response rate on that basis. Eighty-three responses were received from 72 FSUC member organizations representing a response rate of 36.5 percent.

TABULATION OF SURVEY RESULTS PRELIMINARY

1. *Generally speaking*, compared with three years ago, are the Federal statistics you use available:

	Number	Percent
About the same time.....	56	49.1
Less promptly.....	30	26.3
More promptly.....	28	24.6
Total.....	114	100.0

2. Are you experiencing longer delays than formerly between the time when data are released and the time you receive the detailed publication:

	Number	Percent
Yes.....	57	54.3
No.....	48	45.7
Total.....	105	100.0

3. If you have experienced delays in receiving statistics, do you feel that this is due to:

	Number	Percent
GPO distribution.....	58	63.7
Postal System.....	35	39.7
Later release date by agencies.....	30	33.0
Agency distribution.....	6	6.6
Other causes <sup>1</sup> .....	3	3.3
Distribution (general).....	1	1.1

<sup>1</sup> Inability to maintain mailing lists; printing delays; and insufficient priority given to preparation and publication.

Ninety-one persons responded to the above question. Of these, 55, or 60 percent, indicated one reason only. Of those giving one reason only, 56 percent put the blame on GPO, 22 percent upon the postal system, and 22 percent upon the later release date by agencies.

The 91 responses to this question mean that 77 percent of the 118 persons responding to the survey are experiencing delays in receiving statistics.

4. In your current analysis or forecasting activities, do you feel hampered by delays in the availability of specific types of current statistics?

	Number	Percent
Yes.....	90	76.9
No.....	27	23.1
Total.....	117	100.0

Of the 90 respondents that said they were hampered by delays in the availability of current statistics, 88 identified specific types of series of data in which they experience delays. More than one type was identified by most respondents. Ranked in order, the types identified were as follows:

	Number	Percent
Retail sales.....	28	31.8
Population.....	27	30.7
Construction and housing.....	22	25.0
Employment/unemployment.....	21	23.9
Inventories.....	20	22.7
Prices.....	19	21.6
Profits.....	17	19.3
Foreign trade.....	16	18.2
Finance.....	12	13.6
Production.....	11	12.5
Gross national product.....	9	10.2
Health.....	8	9.1
Education.....	7	8.0

5. Have your analysis or forecasting activities been hampered by delays in the availability of detailed *benchmark data*?

	Number	Percent
Yes.....	83	73.5
No.....	30	26.5
Total.....	113	100.0

Of the 83 respondents that said they are hampered by delays in the availability of benchmark data, 82 identified specific types of such data in which they experience delays. More than one type was identified by most respondents. Ranked in order, the types identified were as follows:

	Number	Percent
Census of Manufactures.....	41	50.0
Census of Retail Trade.....	34	41.5
Decennial Census of Population and Housing.....	29	35.4
Consumer Expenditures Survey.....	26	31.7
Statistics of Income.....	24	29.3
Census of Service Industries.....	23	28.0
Census of Construction.....	20	24.4
Census of Wholesale Trade.....	20	24.4
Input-Output data.....	20	24.4
County Business Patterns.....	17	20.7
Census of Mineral Industries.....	11	13.4

6. To get a detailed component of a figure just released do you:

	Number	Percent
Telephone the agency involved.....	79	72.5
Obtain the press release.....	40	36.7
Wait for the Survey of Current Business or similar publications.....	35	32.1
Get the statistics from a computer data bank.....	22	20.2
Other sources:		
BNA daily report for executives.....	3	-----
GNP tables mailed on release.....	1	-----

109 persons responded to this question. One half of the respondents indicated only one of the above means and one half indicated using more than one of the above means for obtaining data.

7. Compared with two or three years ago, is the service you get from the Government Printing Office:

	Number	Percent
About the same <sup>1</sup> .....	43	38.4
Much slower.....	31	27.7
Somewhat slower.....	25	22.3
Somewhat improved.....	13	11.6
Much improved.....	0	0
<b>Total.....</b>	<b>112</b>	<b>100.0</b>

<sup>1</sup> 25 of 34 respondents (73.5 percent) said the service 2 or 3 years ago was poor and 9 respondents (26.5 percent) said the service was good.

8. Has the increase in prices of government publications meant a reduction in the flow of statistics available to you?

	Number	Percent
Yes.....	48	41.7
No.....	67	58.3
<b>Total.....</b>	<b>115</b>	<b>100.0</b>

54 users (47%) indicated that they have taken the following actions as a result of the price increases:

	Number	Percent
Reduced the number of subscriptions or purchases.....	38	70.4
Discontinued certain subscriptions or purchases.....	35	64.8
Increased the size of their publications budget.....	18	33.3

CITY OF HARTFORD,  
DEPARTMENT OF PERSONNEL,  
Hartford, Conn., February 23, 1976.

HON. PATRICIA SCHROEDER,  
Chairwoman, Subcommittee on Census and Population, House Office Building  
Annex, U.S. House of Representatives, Washington, D.C.

DEAR CHAIRWOMAN SCHROEDER: It is my understanding that your Subcommittee is scheduling a hearing on the subject of coordination of statistics and statistical requirements. It is also my understanding that in conjunction with this general subject, your Subcommittee will be concerned with the overlapping and conflicting Federal regulations on the subject of equal employment opportunity that impact on local governments.

In conjunction with your hearings, I am submitting the enclosed statement in the hope that it may be of use to your Subcommittee.

Respectfully yours,

ROBERT D. KRAUSE,  
Director of Personnel.

STATEMENT OF ROBERT D. KRAUSE, PERSONNEL DIRECTOR, CITY OF HARTFORD,  
CONNECTICUT CONCERNING MULTIPLICITY OF FEDERAL REGULATIONS ON THE SUB-  
JECT OF EQUAL EMPLOYMENT OPPORTUNITY

Any municipal official who speaks about Federal regulations on equal employment opportunity should be prepared to document the conditions in his own municipality. These factors are relevant in evaluating statements that mu-

municipal officials may make concerning the burdensome requirements of duplicate, overlapping and conflicting Federal requirements.

The city of Hartford is a central city in a major metropolitan area, which has a population approaching 700,000 people. The city itself has a population of a little over 150,000. Hartford constitutes only 24 percent of the population in the metropolitan area.

As a result, Hartford has a disproportionate percentage of the poor, the unemployed, the elderly, the people living on fixed incomes, and persons from minority groups.

Sixteen percent of the city work force is unemployed. One-fourth of the total population is on welfare. Hartford has 57 percent of the region's welfare case load. The city has per capita costs for fire, police, health and welfare services that are 3.5 times as high as the costs in the eight neighboring suburbs. Of 169 towns and cities in Connecticut, Hartford ranks number 160 in per capita money income. The city ranks number one out of 169 towns and cities in Connecticut in per capita property tax rate.

*The New York Times Magazine* has characterized Hartford as a "financial basket case." These comments are intended to indicate that the city of Hartford has a disproportionate share of the social and economic problems of the SMSA, and has nevertheless made an exceptional effort in using its limited tax resources to solve its own problems.

With respect to equal employment opportunity, additional data may help to illustrate the city's efforts. Minority group members constitute 35.5% of the total city population. The minority population constitutes 29.4% of the adult work force in the city: 24.4% black, 4.7% Spanish-speaking, and 0.3% from other minorities.

By contrast, the metropolitan area has a total minority population of 10 percent, and an adult work force that includes 8.6 percent from minority groups.

Population data for the city and the region are both relevant. The City recruits its own residents whenever feasible, and recruits beyond the city boundaries whenever necessary.

This city and its elected and appointed officials have made a strong commitment to affirmative action for more than a decade. The city began to keep statistics on minority employment in 1968, which was 4 years before there was a Federal requirement to do so. We have seen our minority employment (full and part-time) increase from 14.7 percent in 1968, to 22.1 percent in 1972, and to 28.5 percent in 1975. For full-time employees only, the minority percentage is 25.3. When we filed our EEO-4 report form last year, we had a work force of 3,198. Of this total, 910 were from minority groups. Our total female employment was 794, or 24.8 percent of the total. Additional data show an increasing percentage of women and minorities in professional, supervisory and managerial jobs.

I mention these figures to demonstrate the effect of our own commitment and the progress of our own programs. It is my hope that these data will help to set in perspective the following comments on Federal programs and requirements.

Most of us in the City of Hartford believe that we have a stronger commitment to equal employment opportunity than do the Federal regulatory agencies. It is our judgment that those Federal agencies are concerned largely with paper work and procedural compliance. In the City of Hartford, we are concerned with results. It appears that the Federal demand for procedural compliance has been increasing at a time when Federal aid to the cities has been decreasing.

The basic Federal requirements on equal employment opportunity are established in Title VII of the Civil Rights Act of 1964. State and local governments were first covered under Title VII by the Equal Employment Opportunity Act of 1972.

The Equal Employment Opportunity Commission is the basic enforcement agency for Title VII. EEOC may defer to state enforcement agencies that have adequate staff and enforcement authority. In Connecticut, EEOC has delegated authority to the State Commission on Human Rights and Opportunities. Most complaints against employers in Connecticut are handled initially by the State Commission, but EEOC itself retains the right to take jurisdiction of cases that are not satisfactorily resolved by the State Commission.

EEOC has also issued selection guidelines that apply to all employers, both public and private. The United States Supreme Court has given "great deference" to the guidelines. The EEOC selection guidelines have also been adopted almost intact by the Office of Federal Contract Compliance, which has enforcement

authority on Federal contracts. The same guidelines have also been adopted by the Office of Revenue Sharing, which has enforcement authority for Federal revenue sharing funds.

There is a general consensus among employers, both public and private, that these guidelines cannot be fully complied with by anyone. Psychometricians believe—almost unanimously—that the guidelines are scientifically unsound and beyond the state of the art of employee selection.

This view is particularly prevalent among the industrial psychologists in Division 14 of the American Psychological Association. Attorneys are also convinced—almost unanimously, that the guidelines are so idealistic, and indeed unrealistic, that no employer can ever achieve compliance. The U.S. Civil Service Commission has also said that it is unable to meet the requirements of these guidelines in Federal employment.

Not only do EEOC, OFCC, and ORC have jurisdiction over employment practices. The U.S. Civil Service Commission also has jurisdiction under the Intergovernmental Personnel Act and under merit system standards that are mandated by law in a variety of Federal grant programs. Under this authority, the Civil Service Commission has tended to assert jurisdiction over all employment practices. Beyond this, the Justice Department has enforcement authority to prosecute complaints against employers in Federal Court.

The United States Congress recognized some of the problems when it adopted the Equal Employment Opportunity Act of 1972. Thus the Congress created an Equal Employment Opportunity Coordinating Council and charged it with producing a set of uniform selection guidelines that would have the sanction of all Federal enforcement agencies and would not leave employers with the impossible burden of trying to comply with conflicting Federal regulations. The Coordinating Council is composed of the Justice Department, the Labor Department, the U.S. Civil Service Commission, the Equal Employment Opportunity Commission, and the U.S. Civil Rights Commission. The Coordinating Council has been trying to develop a set of uniform guidelines since 1972. The U.S. Civil Rights Commission has refrained from participating in the work of the Coordinating Council. That left four agencies diligently trying to produce a set of guidelines to which they could all subscribe. Finally last September 24, the staffs of the four agencies produced what was regarded as a near-final draft of the guidelines, in preparation for review under the Office of Management and Budget A-85 process.

At that point, however, the commissioners of the Equal Employment Opportunity Commission decided that they could not endorse the draft of September 24, 1975. The draft was therefore circulated for review with the endorsement of only three of the five agencies that comprise the Equal Employment Opportunity Coordinating Council.

To this point we have sketched the role of seven Federal agencies that have a role in governing the employment practices of local government. Five of those agencies are represented on the EEOCC. The other two include the Office of Revenue Sharing in the Treasury Department and the Office of Federal Contract Compliance in the Labor Department.

Beyond these regulatory agencies are the Federal grant agencies. Each of the grant agencies has its own set of regulations on equal employment opportunity and affirmative action. Among these agencies are the Manpower Administration of the Labor Department, which administers CETA grants under the Comprehensive Employment and Training Act; the Law Enforcement Assistance Administration of the Justice Department, which administers the LEAA grant programs; the Department of Housing and Urban Development, which administers the 701 planning grants; and the Bureau of Intergovernmental Personnel Programs of the U.S. Civil Service Commission, which administers grants under the Intergovernmental Personnel Act.

We have in our city four separate affirmative action plans, each of which is designed to meet different Federal requirements, each of which conflicts in some respect with the others, and all of which leave the personnel staff and the operating departments in an almost perpetual state of confusion.

Occasionally we seem to see a light at the end of the tunnel. Such an instance was the Interagency agreement of March 23, 1973 explaining Federal policy on hiring goals. We regarded this as a document of major significance, since it was signed by the Justice Department, the Equal Employment Opportunity Commission, the Office of the Federal Contract Compliance and the U.S. Civil Service Commission. We therefore entered into extensive correspondence, telephone dis-

cussions and meetings with Federal officials to obtain clarification and understanding of the document.

Once we had done that we took our information to the Department of Housing and Urban Development to help resolve a dispute we were having on an application for a 701 Grant. HUD officials disclaimed any responsibility for the Interagency agreement and in fact said that they had never seen the document. We then made photocopies and delivered them to HUD. In later correspondence the HUD officials continued to insist that they had never seen the Interagency agreement of March 23, 1973.

In the intervening three years, it appears that this document has ceased to represent Federal policy, since no Federal agencies use it in any regulatory or grant programs affecting our city. If that document is no longer valid, it is clear that no other document has been formulated to take its place.

Because of our concern with the multiplicity of Federal regulations, I wrote on July 11, 1973 to the Chief, Intergovernmental Personnel Programs Division, U.S. Civil Service Commission Regional Office in Boston. In that letter, I summarized our concerns and sought assistance. I have been informed from time to time since that date that the Regional Office referred the letter to the Civil Service Commission in Washington; the Commission referred the letter back to the Federal Regional Council in Boston; and sometime later the letter was referred back to Washington, more specifically to the Equal Employment Opportunity Commission and the Department of Labor. At any rate, I have had extensive correspondence in the last few months with EEOC on this subject. I appreciate the interest and concern of the Federal agencies and I am still hopeful that they may be able to provide some guidance and assistance to us. I am attaching the letter of July 11, 1973 merely to demonstrate the long standing nature of our concern with this subject.

Listed below are some of the most significant Federal grant regulations that affect our equal employment activities. The list does not include the various Federal selection requirements nor the Civil Service Commission publications on affirmative action.

28 C.F.R. 42.301 et seq., Sub-part E, Equal Employment Opportunity Program for LEAA grant.

38 F.R. No. 46 at 6415—LEAA, height requirements for police officers, Department of Justice.

U.S. Department of Labor, Manpower Administration, Region 1 Letter Series No. 202-73, May 23, 1973 (MA Sponsors).

OFCC Affirmative Action Guidelines "Revised Orders No. 4" Chapter 60, Part 60-2, pursuant to E.O. 11246, Sections 201, 205, 211 (30 F.R. 12319) and 41 CFR 60-1.6, 60-1.28, 60-1.29, 60-1.40, Title 41 of Code of Federal Regulations amended by adding Part 60-2.

December 13, 1972, Letter from Chief, Intergovernmental Personnel Programs. (Note: This is the only agency with a comprehensive AAP requirement: this letter has been supplemented by further correspondence and published guidelines.)

Department of Housing and Urban Development, Field Office Guidelines for Equal Opportunity in the Comprehensive Planning Assistance Program (701) issued 1/24/73, Title 24 of the Federal Register, Parts 1 and 2.

Title 29, Labor, Chapter XIV, Part 1604, Sex discrimination.

If I can furnish any additional information that may be helpful to the Subcommittee, I shall be pleased to do so.

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AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS,  
DEPARTMENT OF AGRICULTURAL ECONOMICS,  
Ithaca, N.Y., March 4, 1976.

MR. RICHARD C. TAEUBER,  
*Consultant, Subcommittee on Census and Population,*  
*U.S. House of Representatives,*  
*House Office Building Annex,*  
*Washington, D.C.*

DEAR MR. TAEUBER: With this letter, I grant permission to reproduce the article listed below as part of the printed record of the hearings described in your March 1st letter. This permission is granted subject to obtaining the approval of the author and subject to using an appropriate citation as follows.

Bonnen, James T. "Improving Information on Agriculture and Rural Life," *Amer. J. Agr. Econ.* 57 (1975): 753-763. Copyright © 1975 by the American Agricultural Economics Association.

While our *Journal* is copyrighted, we are pleased to have it used for educational and public policy purposes.

Sincerely yours,

WILLIAM G. TOMEK,  
*Editor.*

#### IMPROVING INFORMATION ON AGRICULTURE AND RURAL LIFE

(By James T. Bonnen)

(Presidential Address to the American Agricultural Economics Association, Columbus, Ohio, August 11, 1975. This address was abridged for oral presentation. I am indebted to faculties at Purdue, Clemson, and the University of Illinois, where I presented seminars on this topic. I also profited from an informal weekly seminar on information systems during the spring term at Michigan State University with Alan Baquet, Tim Baker, Bo Anderson, and Glenn Johnson. An early version of this presentation was reviewed by more colleagues at Michigan State University than can be listed. I am especially indebted to Peter Asquith, C. B. Baker, L. V. Manderscheid, Harry Trelogan, and Jim Hildreth. Any errors, of course, are mine.)

"It is a capital mistake to theorize before one has data."—Sir Arthur Conan Doyle.

"The discovery of facts . . . depends at least in part on concepts, assumptions and inferences which can only be defended with reference to normative presumptions."—Marc J. Roberts.

"If there is no 'given' in experience, then there is no difference between deduction and induction."—C. W. Churchman.

I should like to share with you a growing problem in the information base from which this profession works. Over the past five years it has become for me an absorbing challenge and a learning process that in many ways is only just begun. It is an experience which has already been rich in intellectual excitement and filled with implications for the future growth and social usefulness of agricultural economics.

What follows evolved out of the experience of having chaired this Association's Committee on Economic Statistics, which has organized in 1970 and was charged to examine the growing claims that various agricultural data were deteriorating. We found that certain of the older food and fiber statistics were indeed performing less well in some long-time repeated uses (AAEA). However, we also found that the statistician, at whose door the complaints were usually placed, was not responsible for this situation so much as was the agricultural economist. This follows from our discovery that it is not in measurement of data where we were failing but in the adequacy of the concepts underlying the data.

I want to explore the meaning of this and related discoveries for the individual agricultural economist as well as the profession. I shall argue that the problems of agriculture and of rural society, indeed, societal problems generally, are best understood as fundamentally problems of information processing. Thus, if we wish to solve the problems of society, we must first solve the implicit information system problem. To the extent that agricultural economics is able to master the information problems within its preview, it establishes its analytical capacity and its social usefulness. Finally, I shall argue that successful information processing is in turn primarily a problem of the appropriate design of the information systems within which data are collected, analyzed, and acted upon by decision-makers.

I will first comment briefly on the current state of our data base and analytical capability in contending with the problems we face in agriculture and rural society.

Secondly, I want to present what I believe is the most useful way of defining and viewing the nature of data and its relationship to analysis and to information. This paradigm of an information system I believe expands one's understanding of the problems we face as a profession and suggests some characteristics which must be recognized in the design of any improved data collection and analysis process.

Third, I will briefly describe some exciting parallel developments which come to similar conclusions and provide important further insights into the design of information systems and, thus, our capability of managing the problems of a rapidly changing world.

Finally, I will comment on the implications of this for us as professional agricultural economists.

#### OBSERVATIONS ON THE CURRENT STATE OF OUR INFORMATION SYSTEMS

The AAEA Economic Statistics Committee concluded that in those instances where long-collected agricultural data was not performing as well as it had in earlier years, the problem most frequently was a growing obsolescence in the concepts which the data system attempted to measure. Some of these concepts, such as the idea of a farm, are so old and so much a part of our historical tradition that we hardly think of them as concepts at all. But the "family farm," with all its value and organizational assumptions constitutes the central concept around which three-quarters of our food and fiber statistics are designed and collected. Yet it has become an increasingly obsolete representation of the reality of the food and fiber sector. The concept is more than fifty years old, and the structure of the food and fiber industry today only vaguely resembles the structure that prevailed at the time the concept was created. The world has changed and the concept has not.<sup>1</sup>

#### *Conceptual obsolescence*

Let us examine the problem of conceptual obsolescence in more detail. Some agricultural data are more accurate today than before. Most of these data are based on concepts that are *biological* or *physical* and have not changed or have changed little in nature. Examples would be the number of cattle and pigs and the acreage and pounds of potatoes or cotton produced. The great improvement in accounting, measurement, and data processing capability over the last 30 years has combined with conceptual stability to increase the quality of some data. Thus, crop and livestock production estimates, with their biological and physical concept base, tend to be far better statistics today than they were 50 or even 10 years ago, despite the criticism they receive.

Even certain statistics based on social science concepts have retained most of their reliability and in some cases have actually been improved. This tends to be the case in those food and fiber statistics where technological and organizational changes have not been rapid. For example, measures of farm production and yields of wheat and most cereals appear to have lost relatively little in conceptual reliability while gaining much in reliability of measurement. Grain prices are another matter. At the other end of the spectrum, where change in the food and fiber sector has been most extreme, statistics on farm gate broiler production are weak and broiler prices have become nearly impossible to collect or interpret. In poultry and eggs, and in many fruit and vegetable products, contracting and vertical integration of both inputs and outputs have undermined, if not destroyed, the traditional concept of the farm which underlies production and marketing statistics. Even the discovery of beef prices has grown more difficult and the data ambiguous. Data on other livestock, cotton, tobacco, peanuts, and other commodities fall in between these two extremes.

Conceptual obsolescence in data is of two types. It can occur not only (1) because of changes in the organization and nature of the food and fiber industry, as I have just described, but also (2) because the agenda of food and fiber policy (public and private) shifts drastically, as it has recently, changing the questions which the information system is expected to answer. When the questions change, it will almost always be found that (1) the conceptual base of some data, especially secondary data, are not fully appropriate representations; and, also, (2) some data critical to the new questions are not even being collected. When normative or positive change occurs either in the object being represented by data or in the environment of the object, conceptual obsolescence is almost certain to follow.

<sup>1</sup> Conceptual obsolescence is not limited to agricultural statistics. All of our older social and economic statistics share in this problem. It is also obviously a difficulty that will continue to plague all data systems involving social and economic behavior where change is rapid in a modern society.



Recent major examples of conceptual obsolescence of data arising from changes in the environment of agriculture can be seen in the entirely new questions which agricultural economists are asked to answer today, as a consequence of new values held and new positive knowledge about the environment, the energy economy, and the world food situation. The overall agenda of urgent agricultural policy issues has changed almost completely since the Great Depression, when the better part of our present data system was designed and built. While some older data have been conceptually redesigned to respond to new questions, by and large we have "made-do," fiddling with different definitions of the same concept. Thus, for example, we have redefined the farm in almost all recent agricultural censuses, while the concept itself has slowly become so obsolete that no matter how sensible the new definition, we still end up measuring something that in some major degree no longer exists.

Farm income is a prime example of both types of conceptual obsolescence. While some improvements have been made, the concept still fails to net out certain expenses and assets and misses some income flows entirely. The design of the farm income concept is still distorted by the political imperative of the parity income calculation and is grossly inconsistent with the conceptual design of national income accounting (AAEA). These are not easy problems to resolve. Eldon Weeks and his associates in the Economic Research Service (ERS) have examined the major deficiencies in the design of farm income numbers and have proposed some original and practical solutions for certain of these deficiencies (Weeks, 1971, 1974; Carlin, *et al.*, 1973, 1974; Simunek).

One might ask what difference it makes whether one does anything about any of these problems. Even the most casual look through the recent Report of the Task Force on Farm Income Estimates should give pause to any user of farm income numbers (Hildreth). It was estimated recently that improving the measurement and moving the beef and dairy cattle inventory changes from current income (where most of it is now accounted for) to a capital account (where it should be) would have had the effect of subtracting about 7.5 billion dollars from 1973 net farm income of 32 billion dollars (Dyer). Hardly a minor impact!

Both farm input and output measures have long exhibited many conceptual deficiencies, even though some improvements have periodically been made. As the American farm industrialized, specialization has separated many production, processing, and marketing functions from the farm to agricultural business firms. As a consequence, agriculture long ago ceased to be just farms. While some of our colleagues are at work on it, we still lack an adequate paradigm with which to describe and categorize the structure of a modern food and fiber industry and to provide a general conceptual basis for sector statistics. There is, for example, presently no accurate basis for describing the character and for measuring the size or productivity of the sector or its social performance.

In the case of social and economic statistics for rural society, the overpowering problem, as the AAEA Economic Statistics Committee pointed out, is the lack of data. This often is because there has been no demand to finance their collection. But even in areas of increasing public concern, as in rural development and in the various dimensions of human welfare, little coherent data and few well-developed information systems exist. The primary reason is found in the absence of any coherent conceptual or theoretical base for either data collection or analysis. We cannot even define adequately what we mean by economic or rural development.

#### *Institutional obsolescence*

Rapid or steady long-term technological, organizational, and associated value change not only create obsolescence and mismatching in the conceptual base but also in the institutional structure of statistical systems. This is often compounded by the reorganization or development of new administrative structures without adequate care for the integrity or capability of involved data systems. Changes in basic statistical measurement techniques (e.g., shifting the agricultural census from a complete enumeration to list frame surveys) which are unmatched by an implementing organizational adjustment also can create another form of institutional obsolescence and inefficiency (American). As a result of institutional obsolescence or reorganization, current administrative structures often do not bring the necessary information together at the time and places in the structure where it is most needed by decision-makers.

### *Empiric failure in design and collection of data*

Let me turn to a different though related problem: the increasing tendency of economists to propagate endless theories, concepts, and models of unknown value because they fail to design and collect data for an adequate empirical test. In his 1970 presidential address to the American Economic Association, Harvard professor and Nobel Laureate Wassily Leontief indicated economists for this failing. Leontief faults economists for being satisfied with secondary data which does not match and thus cannot adequately test their theoretical concepts. His point is that theory will never be improved without empirical test; and, in its absence, economists are playing sterile games.

Variations on Leontief's criticism have been voiced in many presidential addresses of economists (Bergmann, Blackman, Hahn, Phelps Brown, Maisel, Worswick). In one of the most recent, Bergmann (p. 7) has argued that it is worse than Leontief imagines, since:

"These days the best economists don't even look at second-hand data; they get them on magnetic tape and let the computer look at them. Economists have voluntarily set for themselves the haults on data collection faced by students of ancient history."

Just this year in the annual Richard T. Ely lecture, Alice Rivlin (p. 4) of Brookings lamented that:

"Disdain for data collection is built into the value and reward structure of our discipline. Ingenious efforts to tease bits of information from unsuitable data are much applauded; designing instruments for collecting more appropriate information is generally considered hack work."

Leontief pays a high compliment to this profession by explicitly exempting agricultural economics from his indictment. He describes us as "an exceptional example of a healthy balance between theoretical and empirical analysis and of the readiness of 'professional economists' to cooperate with experts in neighboring disciplines..." However, the AAEA Economic Statistics Committee argued in 1972 that the honor Leontief accords us "properly belongs to an earlier generation..." and that agricultural economists are now falling into the same errors which Leontief ascribes to the economics profession.

The capacity and reputation of agricultural economics was built around a balanced investment in the theoretic and empiric. We have lost much of our early interest in the design and collection of data and now often fail to collect needed data or to respect those who do. There is evidence that we are failing also to update our conceptual base at a pace sufficient to keep up with major changes in agriculture. Notice that conceptual failure directly undermines the deductive processes of knowing, while empiric failure directly undermines the inductive processes of knowing. Thus, these are two different kinds of failure. Either long pursued could be fatal. I am sure we will not let this happen.

### *Property rights and vested interests in data*

Some data problems arise because information always involves property rights, some of which are privately held. As we attempt to redesign or create new data responding to the public interest in problems of international trade with the Soviet Union or China or in public policy issues involving the behavior and performance of the food and fiber sector, we find absolutely essential information is often held by a few firms whose immediate interests are often not served by releasing that information. As industrial concentration continues to grow in food and fiber markets, the issue of private ownership of information versus the public's right to know will become more and more critical and heated. Giant firms acquire with their great size not only an impact on markets but a major responsibility for public information. Where the data on a market are collected from and distributed to firms by a trade association, the tendency to monopolize data is even greater (Stigler, p. 220).

Similarly, bureaucracies and various user groups develop substantial vested interests in existing concepts and measurement procedures. Thus, they behave as if they had a property right in certain data or data systems and often politically are able to enforce their interests. Any change in the design of data must face this problem as a cost of replacing an old statistic with newly designed data. Arrow rightly characterizes this problem as one of human capital made obsolete by change (pp. 40-41).

### *The economics of information*

My objective here precludes an adequate discussion of the complex and important problems of the economics of information. But it is worth noting that the further an economy departs from the assumptions of the Neoclassical model (where information is a free good), and the greater the level of uncertainty (up to a limit), the higher will be the value of information. Appropriately designed information allows one to reduce uncertainty and to manage its undesired consequences. But uncertainty is inherent in the human condition. While "sufficient expenditure" on information will keep the effects of uncertainty "upon people . . . within tolerable or even comfortable bounds, . . . it would be wholly uneconomic to eliminate all its effects" (Stigler, p. 224).

American food and fiber production has in recent years been released from the protective custody of U.S. farm program controls into an internationally interdependent market and an accompanying sea of uncertainty. The value of information has increased many times over, thus exposing more clearly the many weaknesses in our information systems. During the past several decades of shelter from market uncertainty, we so undervalued the major agricultural information systems constructed during and just after the Great Depression that we have allowed them to decay seriously. Improvements are traceable primarily to remedial action following various policy failures and to a few examples of outstanding individual leadership.

Information is an expensive commodity as well as being valuable. Returns to careful decisions about data and information are high. The cost of poor decisions and subsequent lack of appropriate information is extremely high (Bonnen, 1973). The foundation of effective information management is careful design of data and information.

#### DATA, ANALYSIS, AND INFORMATION: A PARADIGM

One of the first problems encountered by the AAEA Economic Statistics Committee was a confused but common vocabulary which erroneously equates data with information and fails to distinguish the distinctive steps in the process by which data and information are produced. We also seem to lack a clear understanding of how the analytical process or system of inquiry over which the agricultural economist presides relates to data collection and to the information system. Let me share with you a paradigm or useful way of viewing an information system which was developed out of a struggle with these questions.

#### *The nature of data and a data system*

Every data system involves the attempt to represent reality by describing empirical phenomena in some system of categories, usually in quantified form. Data are the result of measurement or counting; but when one sets out to quantify anything, the first question that must be answered is, "What is to be counted or measured?"<sup>2</sup> If the configuration of data produced is to be internally consistent and have some correspondence with reality, the ideas quantified must bear a meaningful relationship to each other and to the reality of the world being described.

In other words, there must be some concept of the reality of the world that is to be measured. We know that reality is nearly infinite in its variation and configuration and must be simplified or categorized if man's mind is to handle it in a systematic way. Thus, in producing accurate data, one either implicitly or explicitly develops a set of concepts which in some significant degree is capable of portraying and reducing the nearly infinite complexity of the real world in a manner that can be grasped by the human mind. Data are a symbolic representation of those concepts. If the concepts are not reasonably accurate reflections of that real world, then no amount of sophisticated statistical technique or dollars invested in data will produce useful numbers.

While data presuppose a concept, concepts cannot be measured directly (or in a strictly logical sense measured at all). Rather, we operationalize the concepts by establishing (defining) categories of empirical phenomena (variables) which are as highly correlated as possible with (i.e., represent) the reality of the object of our inquiry.

<sup>2</sup> Data, strictly speaking, are not limited to quantified forms; but this discussion will be confined to statistical data. Implicit in the question of "what is to be measured" is also the question of "why."

Thus, there are three distinct steps or actions which must be performed before one can produce data which purport to represent any reality. These are (1) conceptualization; (2) operationalization of concept (definition of empirical variables); and, finally, (3) measurement. This is what I understand a data system to be (see fig. 1).

The failures and limitations of any one of these data system components constrain and limit the quality and characteristics of the data produced. An inadequacy at any stage can be offset only to a very limited extent by improvements or manipulations at the other stages.

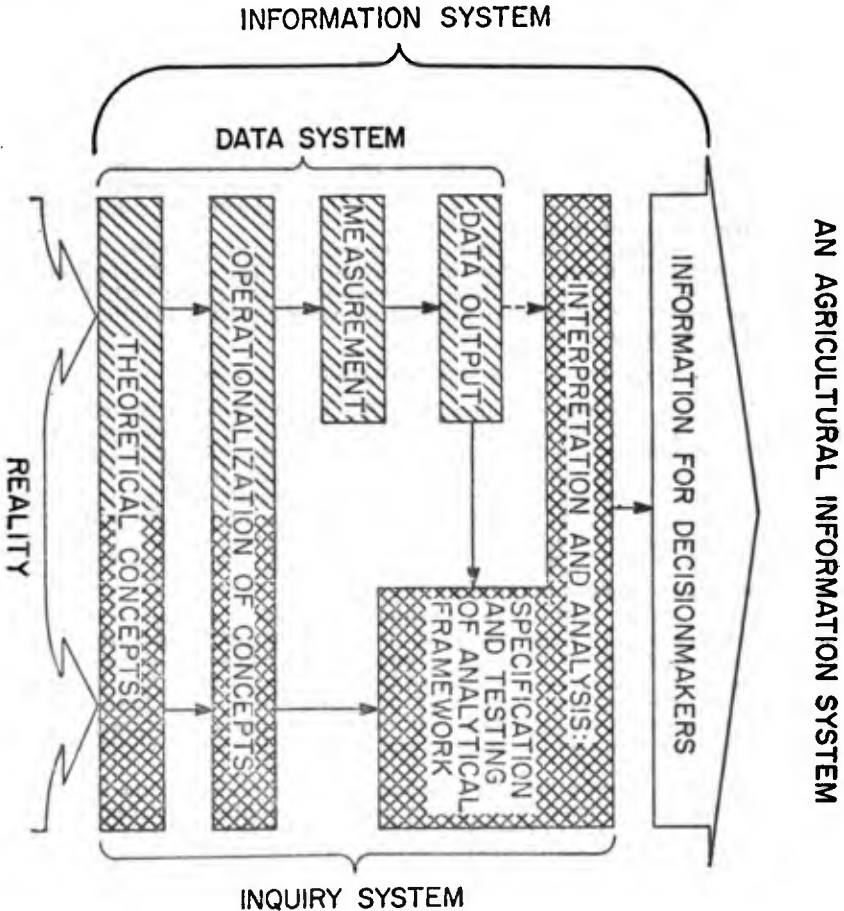


FIGURE 1

Thus, the great improvements in statistical methodology and data processing techniques over the last generation cannot offset failures at the conceptual level; for no matter how well one manipulates the numbers, one may still be measuring the wrong thing. For example, the parity price concept, no matter how well measured, is a poor representation today of farmer welfare. The "cost of production" concept central to the operation of the Agriculture Act of 1973 is so inadequate as a representation of the complexities of farm cost structures that no amount of genius in operationalizing or measuring it can redeem its inadequacy as a concept.

It is worth noting that the term reliability of data has three different possible meanings in this paradigm: (1) reliability of measurement, which is the way the statistician normally uses the term; (2) reliability of operationalization; and (3) conceptual reliability.

#### *The nature of information*

Data are not information (Eisgruber, Dunn). An information system includes not only the production of data but also analysis and interpretation of these data in some purposeful policy decision or problem solution context. The demand for data is generated by the need to make decisions on problems. But decision-makers rarely use raw data. Rather, there are intervening acts of interpretation, through statistical and economic analysis, policy staff and political evaluation, etc., which transform data into information by placing them in a specific problem context to give the data meaning and form for a particular decision-maker (see fig. 1). Symbolic data acquire most of their "meaning" and value from the context and design of the information system in which they appear. Thus, I understand an information system to include not only a data system but the analytical and other capability necessary to interpret data.

#### *Analysis as a function of information*

What does the agricultural economist do when he plays the role of analyst? In our training we all acquired much the same epistemological sense of how we analyze and solve problems. That is, we learned that there is a base of theoretical concepts, a body of theory purporting to represent reality which we (2) operationalize through definition of various variables, often specified formally in a model which (3) must be matched with data or measured representations of these same variables. The model or analytical framework is then tested against the data and conclusions drawn. Thus, in these three steps in analysis, we find two of the same components observed in a data system: (1) theoretical concepts and (2) operationalization of those concepts.

Thus, in our data systems (left side of fig. 1) and in our analytical systems of inquiry (right side of fig. 1), we are operating from the same set of theoretical concepts and, ideally, the same set of definitions which operationalize those concepts. Unless economic theory and economic statistics meet on a common conceptual ground, there can be no mesh between empirical analysis and theory.

The agricultural economist is clearly responsible not only for the design and maintenance of the profession's analytical framework but also for the design of the conceptual base of the data systems which provide the empirical content for that analysis. The commonplace notion held by economists that statisticians alone are responsible for the design and production of data is a grave distortion of our professional responsibilities (Bonnen, 1974). It not only reflects an epistemological weakness but also a lack of understanding of the historical development of data systems. From earliest times data systems have been conceived to solve problems, and professionals whose knowledge was relevant to the problem were involved in design of the data system.

Let me state clearly the implications of this paradigm.

1. Data are not information. They are symbolic *objects*. Information is a *process* which imposes form and gives meaning. Data acquire meaning only in the problem context of some information process.

2. All information systems have a purpose because they are subsets or components of social systems which are designed for some problem-solving purpose. Thus, data collection and analysis always has a purpose and can only be understood fully in a social system context.

3. Data collected for societal decision-making must have a social theory base. No matter how *ad hoc* the collection of data may seem, every measurement act is guided explicitly or implicitly by conceptual and value structures which exist prior to the act of measurement. Data and information are never value free or theory free. Conversely, all concepts or theories have an explicit or experiential prior empiric basis. Theory and data are epistemologically interdependent.

4. Thus, you do not *know* anything until, as a necessary condition, a deductive, analytic mode of inquiry (see right side of fig. 1) is combined with an inductive, empiric mode of inquiry (see left side of fig. 1). What is known from such a process grows in extent and reliability by a repetition of interaction between the deductive and the inductive modes, in which both the analytic and empiric contents of the process are reformulated and improved on the basis of what is learned from each prior iteration.

5. An analytical hypothesis or model and the data for its empirical test must have the same conceptual and definitional base. This is perhaps too logical and obvious to mention, yet a failure to appreciate this fact lies at the heart of our apparent inability to understand and deal with the problem of the accuracy of information provided in agricultural economics. It also lies at the heart of the progressive deterioration in the economists' sense of professional responsibility for the design of the data which they use.

Thus, these last three points are implicit in Leontief's insistence on the necessity for empirical testing of all theoretical formulations with data which are designed around the proper concepts. They are also implicit in the AAEA Economic Statistics Committee's insistence that accurate and useful data can be collected only in a conceptual frame which is an accurate representation of the reality which the data attempt to reflect.

6. Data are symbolic of some phenomena which they are designed to represent. The quality of that representation is only as good as the adequacy of the conceptual base, or its operationalization, or its measurement.

7. When the phenomenon that is being represented changes rapidly, as it has in the food and fiber industry, the conceptual base of the information system must be redesigned frequently to keep up with the change in the reality being represented and the problems being studied. If the rate of change is high enough, the need for conceptual redesign becomes nearly continuous. This is the fundamental problem we face today in the design of information for agriculture. Failure to keep up with the changes in problems and in reality leads to significant conceptual obsolescence, and the system begins to lose its capacity as an accurate guide for problem identification and solution or management. This paradigm of the constituent processes of an information system provides a conceptual template with institutional analogies for the design of data and information systems.

#### SOCIAL CHANGE AND THE DESIGN OF INFORMATION SYSTEMS

Let me turn to several exciting parallel developments. The first of these are found in the work of Edgar S. Dunn, Jr., who in mid-1974 published a book entitled *Social Information Processing and Statistical Systems: Change and Reform*. This is an exciting and stimulating volume. Anyone starting out to examine problems of the design of data or information systems should begin with Dunn. For years Dunn has been involved in the management or study of the problems of statistical and analytical systems. Dunn's ideas and those of the Economic Statistics Committee were both well developed by the time we encountered each other in late 1971 and 1972. We were both struck by the similarity of a number of our ideas, though Dunn was reasoning at a far more general level of information system theory and his ideas were more highly developed. He reinforced and encouraged the Committee in its convictions and contributed many stimulating new ideas. Let me point to three ideas out of a dozen exciting insights in Dunn.

We all understand that industrialization and development increases the demand for information. Development leads to specialization of function and organization. This greatly increases the need for coordination and, thus, the social returns to, and the demand for, information. However, it also brings about a change in the *kind of information* demanded, which we are failing to recognize in dealing with the design of information systems.

The earliest U.S. data systems were usually built around administrative and management needs. The data required can be described as primarily static and descriptive in nature and involving clear, relatively fixed goals and simple or low levels of information processing.

As society has grown more complex and specialized, the demands are not just for more data and greater accuracy in the articulation of detail. Increasingly the demand is for data in a "learning or developmental mode" (Dunn, pp. 32-33). In which the goals of decision-making are not completely specified; and one purpose of the information system is to assist the decision-maker in specifying the goals in a progressively more complete form. In a developmental mode goals and problems may continue to change as learning takes place and thus may never be completely specified. It is obvious that one is not well served in this situation by data which are basically static.

Second, in the learning or developmental mode, the information system which perceives and acts on data is itself changing in structure and behavior in response to the information input. Thus, the information system must be capable of per-

ceiving changes not only in the environment but in itself, even under conditions in which such changes themselves become goals (Dunn, pp. 77-85).

As if this were not demanding enough, when the reality of the world, as in agriculture, continues changing rapidly, the need to redesign the system eventually becomes continuous; and it follows that the capacity for redesign must be a normal function of the information system. If the designer does not become part of the system in this situation, the system's capacity to produce useful information will deteriorate.

Another very significant observation can be made about the design of information systems. Any system designed to solve problems will inevitably combine and use different fields of knowledge. Therefore, the concepts underlying the information system will be derived from different disciplines. Agricultural information systems are an excellent example. If such a system is to produce useful data and, in the process, manage its own continuing redesign, a general "theory of social information processing" or, if you prefer, a theory of theories, or a "meta-theory," is needed. In other words, we must have a means of synthesizing concepts from different bodies of knowledge into a meaningful relationship to each other (Dunn, p. 22).

A meta-theory for information system design may well be an impossible goal. But the logic of its necessity is valid and has the virtue of keeping in front of us as designers of information the true complexity of our task. The design of data and information systems is not a job we can assign to any but the best minds.

It is quite clear that the more difficult and abstract system design problems are central concerns of the philosophy of science and, ultimately, are epistemological in nature. In this literature there is a piece of work which is startling in the clarity of insight into the problems of the design of information systems. Even more remarkable, from an entirely different vantage point or literature, it comes to many of the same conclusions as Dunn. It also reinforces the logic of, and provides further insights into, the information system paradigm presented in this paper. The work is C. W. Churchman's volume, *The Design of Inquiring Systems*. It is not possible here to explore his complex insights adequately. But I can promise anyone who examines Churchman's book an exciting experience.

It is quite clear that in accommodating or attempting to resolve most of society's problems, we create social systems which are really information processing devices for managing those problems. While we are keenly aware of our difficulties in society, we seem almost completely unaware that at the base of these problems are a set of information processing problems that must be dealt with before the urgent needs of society can be served. Much of our difficulty in dealing with these problems arises from our lack of understanding of the information problem. In turn, behind the information processing problem lies the equally unperceived problem of the design of information systems. It is also quite clear to me that despite conventional wisdom, our most important information problems cannot be seen as merely a matter of inadequate measurement techniques. The inadequacy lies in the design and conceptual base of the information processing structures that form our social systems.

I am certain much of my difficulty and slowness in beginning to comprehend this problem can be traced to an inadequate understanding of the methods of social science and their epistemological basis. It is this I believe which lies behind the widespread lack of awareness of the true nature of "the data problem."

In any field at any specific time, one is drilled as a student in a received tradition of scholarship or inquiry which, because it is consensual, remains generally unexamined. Churchman does a great service in forcing much of that unexamined intellectual baggage into a conscious perspective.

I am sure that the striking similarities between the information system paradigm presented here and that of Dunn and Churchman's more sophisticated treatment not only tend to validate my limited insights but suggest a far more generalized framework within which our work on the problems of the design of agricultural information systems should proceed. Dunn and Churchman also establish clearly the significance which this task of improving our information systems has for the society and for a profession such as agricultural economics.

#### FINAL REMARKS AND RECOMMENDATIONS

In the period from the turn of the century to World War II, the researcher not only designed the analytical framework but typically designed and collected



the data for any test of that framework. Communication distances were limited and methodological perspective easier to maintain. Since World War II specialization has progressively separated the data collection function from analysis and interpretation, and we now need to be very much more conscious of the necessity for maintaining a common conceptual base for both data and analysis. In addition, some of our "specialists" in inductive inquiry need to become more conscious of their dependence on the deductive. Many more of us who "specialize" in deductive inquiry need to become much more conscious of our dependence on the inductive.

Agricultural economists have a tradition of inquiry that prevents innocence of the empiric. Even we, however, are increasingly falling in individual and institutional research to do the hard, unglamorous slogging in data collection that often is the most productive of new knowledge.

The agricultural data base in government agencies, in private firms, and universities, at the state as well as national level, is a capital stock, the scope and quality of which governs and limits our capacity to perform as professionals. We must endeavor to deepen our investment in both conceptual respecification ourselves that we have an appropriate balance between the theoretic and the empiric.

We can approach this respecification or design problem by attacking at one end through the identification of problems in current data and information systems and at the other end of the information process by identifying more clearly the questions that need answers now or will need answers in the future and working back toward the specification of data needed to answer such questions. This would in itself be both a useful and no small task, for few if any of us understand our existing data systems *as systems*. In the process we should learn a great deal from identification of system problems, particularly failures of the current system. It then is only a step to modeling the systems in terms of various assumptions as to organizational structure, environment, objectives, and other dimensions in the process of specifying what data are needed to answer what questions. All of these efforts would help us toward the urgent objective of identification and conscious management of our data systems as systems and as part of a still more comprehensive set of information systems.

I have argued that one of the essential elements of an ideal data system is an internal capability for renewal or redesign of the data system itself. How to construct this critical component is not at all clear. The capacity for renewing any system must involve feedback or learning loops within the information system itself. This suggests that at a minimum any major data system should have a group of professionals working continuously on the conceptual base, definitions, measurement, and quality of data. This might be characterized as a statistical system design and quality control shop. There would have to be a similar organization at the information system level. Such organizations would monitor, stimulate, and perhaps contribute to conceptual development in the disciplines upon which the data and information systems are dependent. Perhaps these same groups could maintain close relationships with the users of their data. They also would provide a place in the system which could be the common ground on which information and data users, statistical methodologists and disciplinary methodologists met. This is quite critical, since any conceptual deficiency in data also represents a conceptual deficiency for the analytical frames within which the data must be analyzed.

I believe we all need to become more conscious of these problems in all of our data collection and analysis or research. We need to teach research methods at a philosophy of science level of epistemological consciousness.

This Association should, I believe, continue to provide a forum for the debate on this problem in its Journal and at professional meetings. The AAEA Economic Statistics Committee under Jim Hildreth's chairmanship is already moving on to the study of problems of specific data and analytical systems in agriculture. The Committee's proposed list of projects holds great promise (Report).

Despite substantial recent efforts, I believe the U.S. Department of Agriculture still needs to expand greatly its efforts at reexamination and redesign of the various analytical and data collection processes over which it presides. The action agencies of the Department are so oblivious of the problem, they are part of the problem. The Economic Research Service (ERS), on the other hand, has in recent years made an excellent beginning and is now quite conscious of, and is working on, many of the problems of information and data system design. ERS



has given unstinted support to the activities of the AAEA Economic Statistics Committee.

Political decision-makers as a general rule, however, distracted by the political pressures of the moment, continue as they have for at least 20 years to be unaware or thoughtless of the problems they create for future policy makers. The costs of failure to invest in redesign of data and analytical capability is imposed on other decision-makers and the public of ten and fifteen years later. I understand a political decision-maker's reluctance to have to explain the impact of a change in the parity ratio or farm income concept to Jamie Whitten and other Congressmen. They have my sympathy, but they must support far more effort in redesigning their information systems or the analytical capacity and adaptability of much of the data base of the USDA will continue to decline. There are some interests in the food and fiber sector that would just as soon see this happen; but farmers, consumers, and the nation would be ill served.

The Statistical Reporting Service (SRS) is one of the great strengths of the Federal Statistical System and of the USDA. It was the professional statistician, in agriculture and out, who responded with the greatest interest and understanding to the Economic Statistics Committee's 1972 report to this Association describing the agricultural data problem. It was Harry Trelogan and his colleagues who realized early that there were fundamental difficulties in our data systems. They were largely responsible for the efforts that led to the creation of the AAEA Economic Statistics Committee.

Many are not aware that Harry Trelogan and a core of fine statistical leadership in SRS began over ten years ago to redesign the data base for which they are responsible. In the process they transformed an old system into one of the highest capacity, most efficient, and competent statistical agencies in Washington. That is not easy to do in the face of the lack of support for statistical budgets that has historically prevailed in government.

Harry Trelogan is retiring as Administrator of SRS. If I may be permitted a personal note, it will not be as much fun fighting the data wars without him. A great teacher is always missed. The qualities of his leadership are rare. From Harry Trelogan I learned what integrity in statistics means and what it costs those who maintain it.

I have tried to share with you my own excitement at the discovery of the real implications of the questions raised about the quality of the data upon which we depend as a profession. The significance of these implications for society and for the capacity and social usefulness of this profession is difficult to exaggerate. I hope you too are a little excited. I hope you are able to see the prospect in which at one and the same time we face a major problem in the redesign of agricultural information systems and share in a great opportunity again to contribute to agriculture and the social sciences in a fundamental way, much as agricultural economists did in the early days of econometrics and, in the late 1920's through 1940, development of major information systems to manage and ameliorate the problems of a Great Depression and a World War. We have but to grasp the opportunity. If you chose to work on these problems, I can assure you of an intellectual challenge as great as any you have experienced.

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