PUBLIC SERVICE DELIVERY IN RURAL AREAS: PROBLEMS AND DECISIONS*

by

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Public service quality and availability in rural areas of the United States remains low relative to urban areas [10, 22, 33]. Efforts to improve public service delivery in rural areas have resulted in only limited improvements in service availability and little or no reduction in service costs. Professional workers, elected officials and voters find service delivery problems to be frustrating and not readily amenable to solution.

Research efforts have usually been discipline oriented, methodologically sound and focused upon one or two aspects of service delivery. They have assumed constant or ignored the complex of related issues and interactions having important impacts on service delivery. These research results have usually had limited applicability. Prescriptions for modification or change of delivery systems have typically favored consolidation of functions and/or service delivery units, but have been unsuccessful in predicting the social and economic consequences of consolidation. Both the issues needing examination and the approaches to research on these issues are poorly defined. No overall conceptual framework for research on public service delivery has been identified, and in the absence

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of such a framework, research efforts remain fragmented and disjoint. Under these conditions, it was with more than a little reservation that we approached the preparation of this paper. We recognized that we had neither the conceptual framework nor the knowledge base necessary for a complete and consistent treatment of service delivery problems. Despite these deficiencies we hope to stimulate thought and discussion on issues related to the delivery of public services in rural areas.

In this paper we assume that achieving consumer satisfaction is the logical and legitimate goal of public service delivery. In light of this assumption we examine some aspects of public service delivery in rural areas and identify certain technical and decision problems in planning and managing service delivery systems. The paper deals with four aspects of service delivery in the rural setting: (1) the nature of community services, (2) some characteristics of service delivery systems as related to consumer satisfaction with service delivery, (3) the context within which decisions on service delivery are made at the local community level and (4) some information needs of decision makers responsible for planning and managing rural service systems. We conclude with a brief discussion of the potential for extension and research efforts by agricultural economists.

The Nature of Rural Community Services

A sizeable body of literature examining the nature of public goods and services has accumulated in recent years.[1] These writers have described pure public goods as being: (1) produced collectively, (2) jointly supplied, as they are available to all prospective users if they are available to anyone,

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[1]This literature is too extensive to cite fully. The interested reader may wish to consult [5, 9, 20, 23, 28, 29, 30, 32] and items listed in the extensive bibliographies of [9, 23, 32].

and (3) not divisible into discrete "packagable" units amenable to purchase and sale in the market place. These attributes of public goods are opposite to those of pure private goods, which are characterized by being: (1) privately produced, (2) privately consumed, and (3) divisible into discrete units purchased and sold in the marketplace. As is obvious from these brief definitions, there are few pure public or pure private goods.

Rural community services possess a mixture of the attributes associated with pure public and pure private goods. The market is not an effective mechanism for indicating needs or allocating products or services possessing this mixture of attributes. In the absence of effective market mechanisms various levels of government have carried out supply and market intervention activities designed to insure the availability of community services when and where a need has been expressed. Units of local government have been the principal providers, but have been hampered by limited ability to bear the associated costs -- especially where population density is low and service delivery is costly or difficult.

Rural community services are inseparable from the service delivery systems by which they are made available to users. Delivery systems may be capital intensive (sewer and water systems, transportation systems) or labor intensive (education, medical care, police protection), or intermediate between these extremes. Both public and private providers may be involved.[2] Consumers utilize these services directly, and indirectly through consumption of private sector goods and services containing a community services input component.

Community services, as provided in most rural communities have exhibited

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[2]Private providers are often closely regulated.

most or all of these characteristics: (1) the services are thought necessary for the public good, (2) they are available to and utilized by the general public, (3) they are generally provided through relatively rigid institutional arrangments by the public sector or regulated private monopolies with high fixed investment, (4) prices of services (fees) are not set in the market and some services are provided at zero marginal cost to the consumer, (5) prices (fees) often do not allow recovery of fixed costs and may not cover variable costs, and (6) total cost to the consumer may be constant per unit of time and independent of the quantity consumed [12].

The Nature of Public Service Delivery Systems

In our view, a desirable delivery system is one that provides a given service at a cost, time, place and in a form acceptable and and satisfying to consumers. This implies more than the simple availability of the service providing agency or facility within the rural area or community. In the operational or functional sense, the services must be both acceptable and accessible to potential users.

Since services vary from highly labor intensive to highly capital intensive, the appropriate delivery system will undoubtedly depend upon the service being delivered. Moreover, desirable delivery structures may be expected to vary among rural communities. Preferences and socio-economic characteristics of the client population in interaction with the total environment determine locational differences in consumer expectations and desires. A delivery system that is outstanding in one community may be totally inadequate if transplanted to another location.

Agricultural economists have largely ignored these considerations in their research on rural community service delivery. Research efforts have concentrated almost exclusively on the direct operating cost of the providing agency, with

little attention given to the organizational or institutional arrangements that will best meet client needs. Existing organizations, or any new organizations suggested for service delivery, are implicitly assumed to be approprite and adequate to satisfy consumers. Possibly it is believed that the type of institution has no influence on delivery system performance. This approach has usually resulted in prescriptions for consolidation of many small delivery systems into fewer and larger systems serving wider areas. It has been argued on an efficiency basis that consolidation will nearly always make the rural resident better off and almost never make him worse off. But, prescriptions for consolidation of rural service systems can be questioned on at least two important points: (1) Short-run cost savings may not exist following consolidation in areas where population densities are low, and (2) the institutional changes required for consolidation may reduce consumer satisfaction.

Cost Studies of Service Delivery

The number of economic analyses of service delivery cost reductions achieved through local government consolidation, multi-community cooperation, creation of regional authorities, school district consolidation, etc. has increased in recent years. Findings do not support consolidation as a universal means of reducing costs of services in rural areas of low population density. Factors other than size of service delivery system are usually found to be equally important in determining per unit costs. These factors may be unique to the area or service being examined.

Daugherty and Jansma found that unit water costs were reduced more by higher average water use per customer (intensity of utilization) than by the number of customers served [8]. Schriener, et. al., found that the disposal phase of solid waste management systems (utilizing landfills) showed significant

economies of size, but reductions in per unit cost of collection were more closely related to density of customers served than to numbers of customers. Consolidation of collection to serve a larger population did not reduce costs [31].

In a study of costs for rural fire protection, Hitzhusen found that size economies were realized in systems serving populations up to about 5000 persons. Beyond this community size, costs per capita showed virtually no change [17]. Similar results were found from a survey of solid waste management costs for rural Texas communities [13].

White and Tweeten estimated total costs per ADA by school district size in Oklahoma [35]. For a student density of 1.8 transported students per square mile, a cost minimum was reached at 675 ADA. However, there was little change in cost between 400 and 1,100 ADA as increases in transportation costs offset savings in operational costs of the school plant. Differences in student densities caused significant differences in the least cost school district size and average cost.

Eddleman's study of hospital costs in Florida revealed some cost savings from consolidation within his study area. But, definite limits were found on the extent of feasible consolidation because of "sizable external costs of patient travel as well as diseconomics to size in the production of health services beyond a certain hospital size" [11].

These and other studies of the feasibility of reducing costs by consolidating small delivery systems into fewer larger systems reveal similar cost-size relationships. Economies of size are found for some services but they are usually exhausted within relatively small size systems. Increases in public or private transportation costs offset savings in operating costs of the delivery unit.

Costs associated with low population densities, typical of rural areas, seem to override short-run benefits from consolidation of service systems.

The length of planning horizon is of critical importance in the planning of service delivery. In the short run, the period of time within which the existing pattern of residence is fixed, reductions in total costs per unit of service may be quite limited and difficult to achieve by consolidation or creation of area-wide delivery systems. Potential cost savings do not appear sufficient to stimulate voluntary exchange of locally controlled and operated smaller systems for larger and less accessable consolidated systems. Hence, we cannot consider consolidation to be a universal solution for short-run problems of rural service delivery.

In the longer run, patterns of residence and population density are subject to change through migration and the natural growth or decline of communities. To the extent that growth centers emerge, and a substantial proportion of the rural population is concentrated in areas of relatively high population density, it may be possible to reduce system costs by concentrating public services in these areas. If this occurs, persons outside the growth centers probably will experience increased private costs of service utilization. Tefertiller [33] supports this as a policy for reducing service costs and inducing business investments in the growth centers. However, it is a long-run solution that begs the short-run service supply problem faced by sparsely populated areas and widely dispersed communities.

Organizational Form and Service Delivery

A significant and growing share of services in rural areas are provided by units of general purpose government and quasi-governmental bodies such as housing and transportation authorities, community planning agencies, water districts, and other public agencies.

The influence of organizational form upon effectiveness is receiving attention by scholars in "public economics" disciplines. Serious questions are raised with conventional assumptions about the more efficient delivery of services through the creation of fewer and larger public or private bureaucracies [24, 25, 34, pp. 112-123]. This research indicates that structural changes inherent to consolidation of units gives rise to changes in the conduct and performance of organizations. These changes may be sufficient to negate benefits from the utilization of improved technology and the elimination of duplicating functions, hence preventing the attainment of improved service delivery at lower cost. Consequently, consumer satisfaction with service delivery may not be improved, and costs may be as high or higher than before consolidation.

Two questions are basic to the institutional issue: (1) What are efficiency implications of alternative organizational forms for service delivery? And (2) what are the implications of alternative organizational forms for consumer satisfaction with service delivery?

The most common organizational form for public service delivery is the public bureau. Niskanen develops a conceptual framework for examining the behavior of public bureaus viewed as providing a total output of services for a total budget. Hence, the public bureau can generally be viewed as a non-profit monopolist operating under a cost reward system different from that familiar to privately owned profit-making firms.[3] Niskanen suggests that a major problem with the supply of public services through bureaus is allocative inefficiency rather than technical inefficiency. Since the bureau faces an "all-or-nothing"

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[3]While Niskanen limits his analysis to the public bureau, many parts of it appear to be applicable to any bureaucratic organization.

demand curve and since it cannot appropriate excess profits, its rate of output is such that marginal outputs will be valued less highly than alternative outputs which could have been produced from the marginal inputs.

The bureau is motivated to maximize its output for a given budget and to maximize its total budget. The bureaucrat can benefit only indirectly from the operation of the bureau, thus he seeks to maximize a utility function that may include as variables: salary, perquisites of the office, power, reputation and ease of managing the bureau. These variables are budget elastic, increasing as the bureau's budget increases. The bureaucrat will attempt to expand output and the budget so long as his total budget covers total costs. Hence, the public bureau is allocatively inefficient in a manner converse to that of the profit maximizing monopolist. Niskanen concludes that the service providing bureau is an inefficient provider of the level and quality of service demanded by consumers. Even though, "demand by consumers may be the basis for establishing a bureau, the interest of this group in preserving the bureau will diminish or disappear as the bureau creates no consumer surplus, except by negligence. A bureau, however, creates a substantially larger factor surplus than would a competitive industry, and the primary interests in continuing the bureau are likely to originate from the bureau itself and the owners of specific factors" [24].[4]

This problem is further compounded by the non-transferability of ownership rights in the public service delivery bureaus. The public bureau is owned by

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[4]The argument that bureaus are inefficient is not new. Marshall [21, p. 284] gives reasons for bureaucratic inefficiency in private firms due largely to friction of operation. However, these recent analyses more nearly develop a conceptual framework for bureaucratic inefficiency due to conduct, performance and non-transferability of ownership leading to output decisions inconsistent with consumer interests.

the citizens it serves, but individuals can neither sell ownership shares nor purchase shares from other owners. Ownership is automatic by virtue of residence and can be relinquished or traded only by movement to a different location and political jurisdiction [34, p. 117]. The public bureau lacks incentives to produce output with the least cost combination of resources, to seek the most effective means of delivery and to respond to consumer demands. Consequently, the typical public bureau that was established to satisfy consumers' service needs evolves into an agency with internal (or agency) orientation and limited effectiveness in meeting consumer's expectations of service delivery.

It is unlikely that this type of agency oriented system will formulate service delivery objectives and procedures consistent with those desired by local service users, especially as the service area becomes large and social contacts between consumers and agency personnel are reduced. Agency procedures will tend toward service delivery at a point most convenient to the agency in an effort to minimize agency costs, but not its budget. The agency oriented system is likely to take little or no account of consumer costs and may take little cognizance of individual consumer needs or demands. It tends to provide and deliver services as a part of agency programs without regard to the appropriateness of these services. This occurs because it is easier to operate a program oriented agency than a problem oriented one. As the agency increases in size and complexity through consolidation or growth, these characteristics associated with internal and independent agency objectives, may be expected to intensify rather than diminish and the agency orientation increases at the expense of consumer interests.

Since the writings of Woodrow Wilson, we have generally assumed that the hierachically ordered bureaucratic system is the most efficient organization

for public service delivery [36]. Efficiency usually has been defined in terms of minimizing agency cost and duplication of functions. But producer efficiency in the absence of consumer satisfaction with the service has no meaning. Can we continue to rely upon the numerous federal-state-local bureaus that exist (and are being created) for the purpose of delivering public services in rural areas? If our ultimate goal is consumer satisfaction in the delivery of community services, it appears we cannot assume that the traditional bureaucratic organizational form is necessarily desirable for the delivery of all services. Neither can we assume that our efficiency studies will lead to lower costs to consumers unless the providing organization has the incentive to adopt cost-saving innovations.

Very little attention has been given to the impact of alternative organizational forms upon consumer satisfaction with rural community services. Economists and political scientists concerned with service delivery in the urban setting have devoted considerable effort to examination of this issue [5, 25]. Alternative organizational forms, including direct service provision by private firms, contractual arrangements between governments, contracts between governments and private firms, increased reliance on user fees, and other institutional changes have been suggested. Further, alternatives for changing the incentive and reward systems of existing organizations (e.g., introduction of competition and/or market mechanisms) to improve consistency between agency and consumer goals have been examined. Similar analyses are needed in rural areas to identify and evaluate the range of organizational alternatives that may be desirable for public service delivery.

Obviously, all alternative organizational forms have been neither identified nor analyzed. We are constrained in this paper to merely offering this as a fruitful area of research that has been largely ignored in the past. It may be that the final solution will consist of a combination of existing institutions that insure some measure of uniformity of opportunity among areas and flexibility

to more nearly meet consumer preferences in local areas. Local freedom of choice has historically received high social priority. It would seem appropriate to attempt to preserve these attributes as we plan systems for rural public service delivery.

Regardless of the organizational form it appears the desirable delivery system would be one with a strong client orientation in which service delivery is evaluated at the point of consumption rather than emanation. [7]. A client oriented system would focus upon the problems of consumers rather than upon agency programs. Within resource constraints, user satisfaction would be its primary goal. This implies a system with continuing flexibility to respond to individual demands and unique local situations. Such a system would probably require substantial consumer input to the design and implementation of agency effort. The need for this type system is clearly greater for the delivery of labor intensive services involving frequent person to person contact (such as education, welfare, health and police services) than for capital intensive services.

Decisions on Rural Community Services

As units of local government have become increasingly involved in the provision of community services, they have looked to state and federal government for financial and technical assistance. In most cases, this assistance has been conditional upon local entities conforming with guidelines, minimum standards and application procedures set outside the local area. These requirements have usually been designed to prevent waste or loss of funds, to insure that all citizens will receive equal treatment or to facilitate concentration of assistance in areas of special need.

Ample evidence is available that indicates these objectives have not been

fulfilled. Rural areas receive only a small proportion of federal assistance despite their demonstratably lower levels of services. However, we do not wish to examine or debate these aspects of assistance programs. For the moment, we are more concerned with the impacts of these requirements upon local decision-making. To do this we start by briefly examining the context within which local governments operate and then turn to a more detailed examination of some impacts upon local decision-making resulting from requirements set outside the community.

Within the framework provided by federal and state constitutions, executive officers and legislative bodies at all levels of government seek to respond to the perceived needs of citizens. Where constitutional rights or legislative intent are unclear, in doubt, or challenged, court decisions provide interpretations and the legal basis for a variety of actions including enforcement. The intent of executive orders, legislation or court decisions usually is implemented through the actions of federal and state agencies or through the creation of special purpose units of government such as housing authorities or special districts. Agencies typically develop and implement guidelines, rules and regulations for the conduct of their activities and these are uniformly applied across all locations and types of local conditions.

These characteristics of governmental structure and operation through bureaucratic agencies has resulted in restrictions upon the range of choice open to local decision-makers. The combination of direct regulation, requirements for funding assistance and the setting of minimum service levels has, in many instances, made difficult or impossible the development of local service delivery strategies that are consistent with local expectations.

Local human, financial and physical resource limitations may restrict the set of locally feasible responses to community service needs so that there is

little or no correspondence with the set of responses required to meet outside-the-community requirements and guidelines. When this happens, the decision-maker is forced into a choice between locally feasible but legally deficient services and locally infeasible services meeting standards set outside the local area. In either case local people feel their return from tax dollars spent is unacceptably low, and decision makers react negatively to proposals for change. The resulting inaction, neglect, denial of need and failure to respond to requests for assistance cripples many rural community service delivery systems.

Enactment of the Rural Development Act of 1972 has not significantly altered this situation. A substantial expenditure of local effort is necessary to secure assistance under the titles presently funded. The major funding authorities came from existing programs with all their attendant red tape and bureaucratic procedures. General revenue sharing appears to have greater potential as a source of funding for locally desired and locally acceptable services. However, a recent report shows less than 50 percent of general revenue sharing funds have been expended [6]. Uncertainities over allowable uses for these funds and fears that revenue sharing may be discontinued appear to be factors contributing to this situation. Some local decision-makers have chosen to place revenue sharing funds in interest bearing deposits instead of expending them on service delivery systems whose continuation would be demanded regardless of whether or not revenue sharing is terminated.

The impact on local consumer satisfaction on non-local requirements and restrictions may be demonstrated in a variety of ways. In the appendix to this paper we show, by use of a community indifference map, the effects of three alternative funding arrangements. Recent research illustrates similar effects. For example, Bish and Ostrom summarize research indicating increased consumer satisfaction and lower costs with police services where greater

latitude for local decision-making was attained through decentralization [3, pp. 43-46]. Bawden cites numerous examples of inefficiencies and inequities resulting from "in kind" poverty programs and from the linking together of assistance programs (e. g., Medicaid and public assistance) [2]. Thus, there appears to be both conceptual and empirically observed reasons for preserving a range of choice open to local decision makers.

Despite apparently valid reasons for seriously reconsidering both the customary organizational forms for service delivery and restrictions placed on local decision-makers, we continue and expand our previous methods of stimulating improved rural community services. Reasons for this apparent illogic include: (1) The conventional wisdom, and the realities of funding and political influence, favor agency oriented approaches to problem solving; (2) As a country we are urban oriented and have chosen to ignore the realities of human and physical resource limitations faced by rural decision-makers; (3) Programs have been and are oriented toward urban dominated national goals and standards with little recognition that these may differ from rural goals and standards; and (4) Given this national orientation, it is thought to be less expensive to entice the local community into providing the desired level of services through assistance programs tied to restrictions on local decision makers' range of choice.

Changes resulting in increased latitude for local decision-making would substantially alter assistance programs. But, such changes appear to be necessary conditions for consumer satisfaction with service delivery in rural areas.

Information Needs for Local Decisions

Decisions on service delivery in most rural communities result in incremental changes. The level of services provided in the community is increased or decreased by small changes from the amounts provided in previous years.

However, rising expectations of rural residents combined with the availability of categorical aid programs have resulted in generally increased demand for public services. As local decision-makers consider alternative methods of meeting these increased demands, they need planning and management information adequate for decision-making on service delivery.

The paucity of helpful information for this purpose is noteworthy. Until recently, the rural decision maker received little, if any, planning and management assistance. Land grant universities, the U.S. Department of Agriculture and other rural oriented organizations have recently accepted the responsibility for providing such assistance. But, the breadth and scope of informational needs presently are not well defined. There are at least three major considerations that must be dealt with if rural community services are to be provided in an efficient manner. These are: (1) an analysis of supply and demand for services, (2) projection of factors influencing supply and demand and (3) institutional planning to evaluate alternative organizational forms for service delivery. Conceptual and measurement problems are associated with each of these as are opportunities for contributions by agricultural economists.

The Supply of Public Services

The delivery of each rural public service is a resource using activity. The basic management problem of the local community is that of efficiently allocating its resources to produce desired levels of public service output and quality. Theoretically, this management problem differs little from that of the private firm, but there are numerous methodological and measurement problems involved in estimating production and cost functions. The measurement of output and quality has been discussed most frequently as a major problem [10, 14, 15]. Other complications include the identification of relevant costs and the estimation of optimal size of delivery system.

Economists can contribute analyses of production and cost relationships of individual services and interrelationships among services insofar as these items of information can be compiled. However, we must recognize that such concepts as economies of size or least-cost size of unit that have guided much of our analyses of private firms may be less useful in decision-making on the delivery of rural community services. Local residents and officials are likely to be chiefly concerned with the total cost, quality, and accessability of services. Reliable information on required inputs, expected outputs, and the most suitable organizational arrangements will greatly improve actions of decision-makers.

Estimating Demand For Services

Serious limitations make difficult the estimation of public service demand through the transfer of concepts and tools used in estimating demand functions for private goods and services. Margolis states the problem as follows [20]:

> "No matter how difficult it is to estimate demand functions for private goods, we usually have observations of amounts purchased during several periods at a reasonably well defined set of prices. Often these gross observations can be supplemented with information about the attributes of purchasers--for example, their income, race, residence, occupation, etc. But how different it is in the public sector. The consumers of the goods are not the purchasers; the purchasers are a mix of elected and appointed officials who pay with tax revenues; the taxpayers may not be the users of the services and decision makers may be neither taxpayers nor users... Not only are there several steps between consumers and payers, but often the consumer may not be part of the political constituency which is doing the paying."

The aggregate data series of prices and outputs so useful in analyses of demand for private goods do not exist for most public services. Few reliable measures of service output and price are available. Under these conditions, extensive surveys are required to determine who uses specific services, and factors determining the intensity of use.

Estimation of service demand for a community or area may require a variety of analytical approaches. For those goods and services with relatively strong price signals (e.g., water, electricity, refuse collection) the individual preference and market behavior approach may be employed. Such services are usually financed through user charges. For other services where consumer preference signals are weak, we may find political approaches such as voting behavior of consumers, legislators or office seekers to be useful [5].

Projection of Economic Factors

Local decision-makers' willingness to supply community services and the willingness of taxpayers to support service delivery will depend in part upon their perceptions of future conditions. Projections of local conditions, including estimates of the expected level of economic activity and employment, the number and age distribution of the population, and the incidence and amount of taxation are vital to the decision-making process. Estimates of the impact of major investments or disinvestments can provide the basis for estimating service needs in localities undergoing rapid change.

These types of information can be generated from regional economic analyses familiar to agricultural economists. Inter-sector relationships, secondary and tertiary impacts must be incorporated to provide adequate estimates. Reasonable approximations can be secured from the assiduous use of existing techniques. This process will become more effective when truly dynamic regional models are developed.

Institutional Planning for Rural Services

Public services in rural communities can be provided through a variety of organizational arrangements. As indicated earlier, there is increasing evidence that the efficiency and effectiveness of service delivery may vary widely depending

upon the organization of the supplying firm or agency. This evidence seems to justify more investigations to identify alternatives to the traditional bureaucratic public agency.

Agricultural economists can provide local decision-makers with valuable information such as comparative analyses of public and private hospitals, public and private police protection, fire protection, garbage disposal and other services. Research such as that conducted by Bryant [4] on poverty programs should be extended to other services and agencies. Those who desire to become involved in efforts of this kind will find work by political scientists, political economists and (to some extent) rural sociologists to be of interest. A re-vitalization of institutional economics may also be in order.

We cannot resolve the questions relating to the appropriate organizational form for the delivery of rural community services, and universal prescriptions for appropriate organizational forms may never be forthcoming. However, we conclude that the local officials' ability to supply rural community services satisfactory to consumers depends upon both the characteristics of the service provided and the organization by which it is supplied.

Extension and Research Efforts by Agricultural Economists

A County Commissioner recently remarked to one of the authors that business at every Board Meeting during the past year had included at least one request for total funding or matching funds for some type of services. Requests came from the local committee on aging, the local council of governments, the regional planning commission, a group working with youth, a group working with minorities, the county law enforcement council, the civil defense coordinator, and from others too numerous to mention. The Board fully funded some of these requests, others were partially funded, some were deferred and some were refused. Of

greatest importance for the purposes of our discussion today was the County Commissioner's statement that in no case did the Board have objective and reasonably complete information upon which to make their decision.

In many instances they did not know whether people in the county really wanted the services. The Board usually had only a hazy idea of the type and amount of services that would be made available in return for the money requested. And, they had no way to evaluate the efficacy, efficiency or appropriateness of the proposed delivery system.

This situation is not unique to one county. It is widespread throughout the counties of the United States and is shared with many or most of the legislative bodies of the nation's municipalities. Research to provide the needed information, and extension programs to disseminate that information to local decision-makers have a waiting audience.

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Appendix

Various impacts of financing assistance requirements and minimum standards are demonstrated using assumed community indifference curves in Figure 1. Service X is the service being examined and Service Y is defined as a composite of all other services offered within the community. The community is initially at rest at point C, with x_0 of X and y_0 of Y provided. The following changes are considered:

1. An unrestricted lump sum grant would shift the budget line from X_0Y_0 to X_1Y_1 with a resulting shift x_0 to x_1 and y_0 to y_1 in the amount or quality supplied of services X and Y. Following the grant, community indifference level I_1 is attained where I_1 is greater than I_0.
2. A restricted grant in the same amount that must be expended on X giving a level of X greater than x_1, say x_2, results in attainment of indifference level I_2 where I_1 is greater than I_2 is greater than I_0. The level of Y remains at y_0 if the restricted grant is sufficient to support x_2 of X.
3. If the grant is for parital funding, requiring local matching funds and a minimum X of x_2, the allowable set of choices is severely reduced. If the grant is sufficient to allow the shifting of the budget line to X_1' A B Y_0, decision-makers must choose between providing services at point A where x_2 of X and y_3 of Y can be supplied (resulting in attainment of indifference level I_3 where I_3 is less than I_0) or points along the line B Y_0 which includes point C. Rational choice results in rejection of the partial grant and a decision in favor of point C.

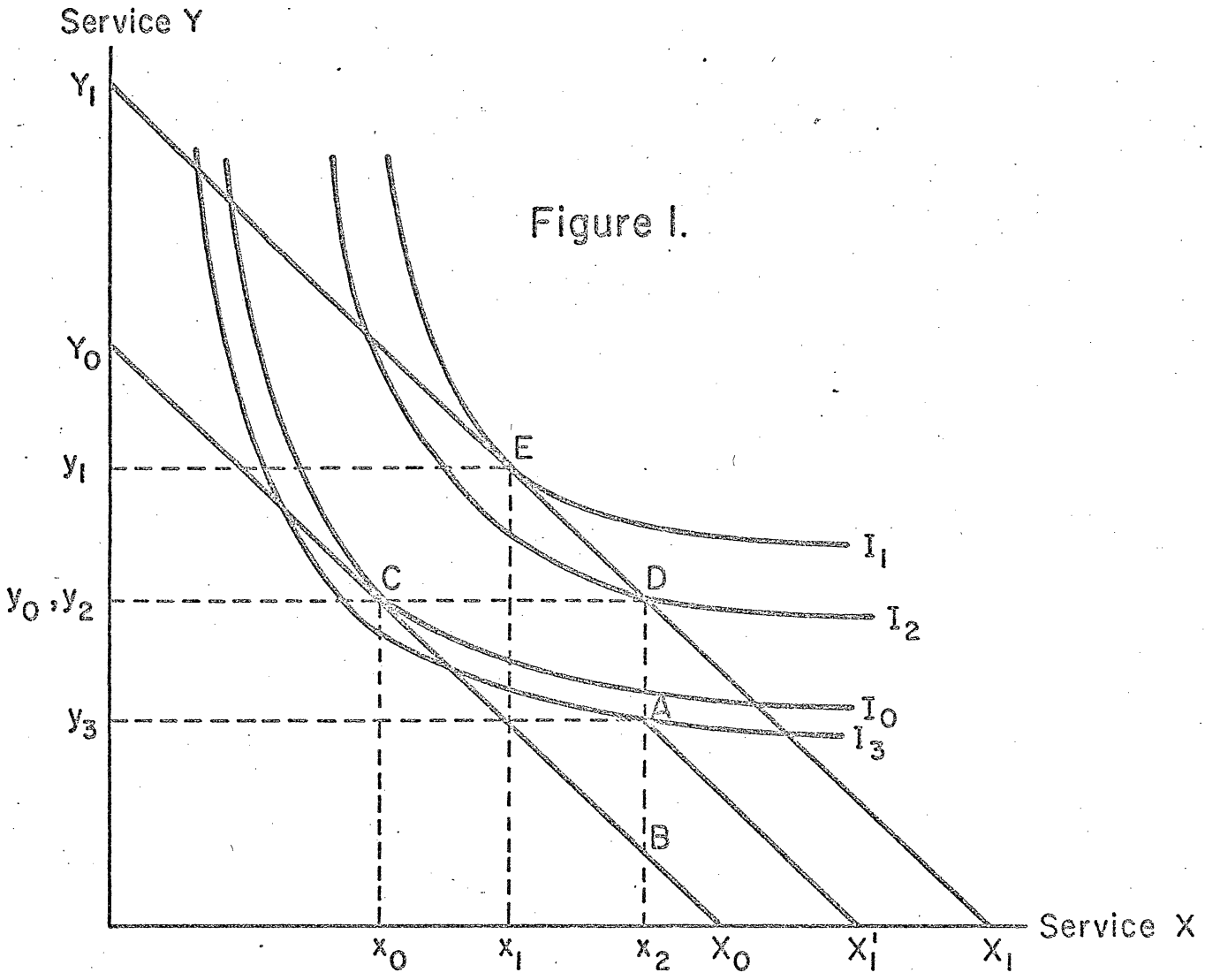
Service Y
Y_1
Y_0
y_1
y_0, y_2
y_3
E
C
D
A
B
I_1
I_2
I_0
I_3
x_0
x_1
x_2
X_0
X_1'
X_1
Service X

Figure I.