

**COOPERATIVE AGREEMENT ON HUMAN SETTLEMENTS  
AND NATURAL RESOURCE SYSTEMS ANALYSIS**

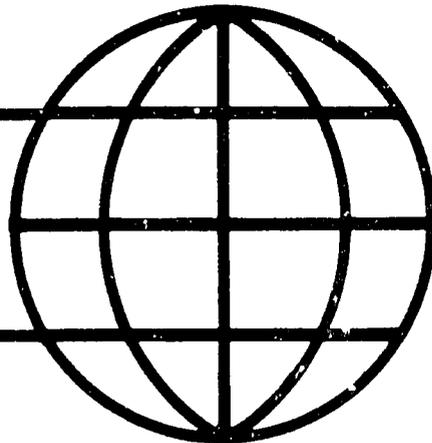
INDIAN PLANNING OF URBAN FUNCTIONS

FOR RURAL DEVELOPMENT

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Cooperative Agreement (USAID)



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## Scope of the Review

This is a working paper which has been written in the U.S. without the benefit of access to the richer body of materials on the subject within India itself. The cause for preparing it is the fact that for the past six years, USAID, through its Urban Functions in Rural Development project has been assisting in the planning of urban functions appropriate for rural development in many of the countries in which it works. Efforts in India which had similar objectives can, however, be traced back almost twenty years.

To learn from the Indian experience will, of course, involve more than the literal adoption of approaches it may have found to be successful. The barriers to integration of rural and urban sectors may be quite different in different countries and the causes of underdevelopment of the rural sector may also differ. In one country the path to development of the rural sector may lie in reducing the leakage of surplus value from rural regions, a leakage the continuation of which may be facilitated by the same rural-urban linkages that are necessary to bring social services to the isolated rural populations. Rural development requires the simultaneous development of physical, geographical and social linkages between

town and country so that symbiotic relationships will replace the exploitative relationships so often characteristic of the past. Indian Regional Planning has usually been sensitive to these concerns and yet, in its efforts to devise simple, replicable approaches appropriate for conditions that differ socially, economically, physically and administratively throughout its vast land, it has often enthusiastically adopted theoretical approaches from elsewhere. Much of this review is a story of the pragmatic adaptation of these theories to Indian conditions. The purpose of the review is to identify the theoretical, empirical and analytical bases of the planning efforts undertaken by groups whose purpose was to make urban services accessible to rural populations.

My background to writing this paper is this: In 1968 I taught a seminar "Central Place Theory" in the Geography Department of Michigan State University, where we reviewed efforts to use the theory in settlement and service location planning. I was introduced by a Sociology student in the seminar to Dr. Lalit K. Sen, a Sociologist at The National Institute of Community Development, Hyderabad, India who was on a brief study leave at M.S.U. We discussed the question of improving rural access to urban services and the paradox that, although Central Place Theorists had taken as their point of departure for construction of the theory, the thesis that, as Christaller quoted Gradmann, the chief profession of a town is "to be center of its rural surroundings and mediator of local commerce with the outside world," (Christaller 1966, p.16);

nevertheless, in the rural India that Dr. Sen knew, towns very often did not fulfill this function well. Was the theory useful in redressing this need?

In 1970, Dr Sen invited me to visit N.I.C.D. to participate in the training of "field officers" from twenty pilot study areas in India who, over the next three years, would be the principals in the field in the implementation of the Government of India's "Pilot Project in Growth Centres." With assistance from The Ford Foundation, I spent two months in early 1971 visiting NICD and The Ford Foundation, New Delhi. I made four more short visits as a consultant to The Foundation in the next three years in its role as organizer of a "Central Research Cell" for the project. I have returned to India seven times since then, once with support from a Senior Fellowship from The American Institute of Indian Studies, at other times with assistance from The National Science Foundation. I have collaborated with Dr. Tewari at The Indian Institute of Management, Bangalore. In 1978, I had the pleasure of working with Dr. R.P.Misra then at The University of Mysore and, more recently, with Dr. Mahadev and colleagues at The University of Mysore. My recent studies have investigated the geographical accessibility of the rural population of an Indian District to basic goods and services and have investigated the applicability of location-allocation and related optimization algorithms to the solution of geographical accessibility problems. At this time none of my Indian colleagues have had the opportunity to comment on this

paper. I welcome comments.

### Indian Regional Planning Theory

#### Growth Center Theory.

Indian regional planning thought in the 1960's recognized that regional development in an Indian context had to address the problem of the development of the rural areas rather than, as in the contemporary European and American context, address the problem of rural population decline and the economic growth of the larger urban areas in their midst (Borchert and Adams 1964). A view that received widespread endorsement was the view that planning should not merely adapt to the short-term deficiencies of an area but should set for itself "the more ambitious task of intervening in the interplay of economic development and spatial evolution, aiming at controlling the process and steering the evolution of the spatial organization into a structure which is judged to be more conducive to the resolution of the real problems of national development than the one which would arise out of adapting to the prevailing trends," (Hermansen 1971, p.60). The theory of growth poles (Perroux 1955) and of growth centers (Misra et al. 1970; Hermansen 1970) were consistent with this view but it was soon seen that the industrial-urban context of the former was not well suited to the

problem seen to be crucial in the late 'sixties in India, of stimulating agricultural productivity and production. It was argued that regional centers (growth centers) could play the role of "transmitting growth to the regions and in counter-balancing the imbalance between regions..." (Hermansen 1971, p.76).

"Developmental Spatial Planning" was the term used for the idea that Governments could intervene to bring urban functions to designated places and thus alter the evolution of the spatial organization of activities in a way that would promote increases in productivity and production-levels in the agricultural sector and levels of welfare in the regions, (Hermansen 1972). The goal was no less than the integration of the society in remote regions into the modern state. Literature from Poland and Ghana were cited as examples of countries where attempts to do this had been successful, (Fisher 1966; Grove and Hussar 1964). Key questions became where should these growth centers be located and what kind of feasible interventions would best lead them to fulfill their expected role?

On the question of feasible interventions, Hermansen identified four types of key variables:

- a) location of public services
- b) changes in the political administrative decision system;
- c) location of non-central place activities, except for non-shiftable trades like agriculture, etc;
- d) design and quality of the networks of transport and communication routes. (Hermansen 1971, p.77).

### Planning for Growth Centers: The Appropriate Scale?

This literature of Indian Regional Planning Theory contains many discussions of the problems of integrating spatial development. Concepts are often expressed in the abstract and it is not always clear what geographical scale is being discussed. Indeed, it is often stressed that the same principles of areal-functional integration apply at different geographical scales. Consequently, when efforts were made to implement theory the principles were applied at the scale of operation and jurisdiction of the administrative organization concerned. Much of the regional planning activity in India in the 1970's is to be understood in these terms. Prior to 1970, planning in India had been at one of three geographical levels: the central Government level, the State level, and the Community level. Much has been written about the grass-roots planning at the community development level and the functioning of the system of elected officials (Panchayati Raj), and appointed bureaucrats (Community Development Administration) to this level. The Community Development Blocks had first been defined in 1951 and since then the allocation of development funds had generally been made according to pro-rata principles in which each village received its share of the scarce development funds available. By 1970 dissatisfaction with the results of this allocation device was widespread and the arguments of the growth centre planners received a

more sympathetic hearing in New Delhi. Accordingly, the Central Government saw the need to integrate the grass roots Community Development Program activities with plans being made at the larger geographical level of the District. Between 1970 and 1974, Central Government policy was that this could best be achieved at the smaller geographical level of the Community Development Block (approximately 125,000 people per Block). Working at this smaller geographical level it was soon found that growth centre theory was appropriate to the extent that it addressed the problems of connecting regions to each other and to the national economy but that, as defined at that time, it was less appropriate for many of the problems found in the more local economies of the Block-level, (Mellor 1968; 1976). Thus, terms such as "growth foci," and "service centers" emerged and received the most attention even when found in books entitled "Growth Poles" (Misra, Rao and Sundaram 1970) or in major Government Research and Development Projects as in the Indian Ministry of Agriculture's 1971 Growth Center Project (see below and Fourth Five Year Plan). As Wanmali observed, increased attention on micro-regional development problems led to the introduction in 1974 of the term "central village" into the Indian "Growth Pole" literature; (Wanmali 1983, 22; Misra, Sundaram and Rao 1974). Micro-level planning and Integrated Area Development Planning emerged and although growth pole and growth center theory were still frequently referenced, central place theory quickly became the stated theoretical basis of planning at the local and regional level.

Central Place Theory.

The acceptance of central place theory as the appropriate theoretical basis of Indian regional planning, work after 1972 appeared to begin with the publication of *Market Towns and Spatial Development in India*. (National Council of Applied Economic Research 1965). Later, Johnson expanded his concern beyond the problems of marketing to include problems of access to goods and services of all kinds that rural populations need for their social and economic welfare, (Johnson 1970). The academic groups in the West who had studied such problems were mainly Economists, Geographers and Sociologists. Douglas Ensminger, Representative of The Ford Foundation in India at that time, as a rural sociologist himself, had been familiar with and had contributed to their literature on the location of rural services and on problems of geographical accessibility of rural populations. He was instrumental in developing a proposal for the Foundation's support of Indian planning activity in this area. A number of Indian rural sociologists were also familiar with this literature (see, for example, Galpin 1915) and with the more recent work of Geographers in this area, particularly that of Berry; (Berry and Garrison 1958; Berry et al. 1962; Berry 1967; Berry and Pred 1965). A review of the bibliographies of Indian planners around 1970 shows, however, that the central place theory literature that was being cited was literature that sought confirmation of aspects of the theory in

existing settlement patterns, such as the existence of a hierarchical arrangement of activities in places. Largely missing were some interesting literatures in which the dynamics of change in the locations of services in places had been studied and alternative theoretical principles in central place theory were discussed; (Berry et al. 1962; Berry and Garrison 1958; Pred 1967; Skinner 1964; Von Boverter 1964).

The stage was set for the adoption of a theory as a basis for achieving planning goals. Unfortunately, the distinction that Central Place Theorists themselves had often made between the theory as a normative device to determine the characteristics of a system of settlements and associated activities that would optimize given criteria, and the theory as an explanatory description of existing patterns of service activities was missing from the Indian Planning literature of this time, (Christaller 1966, Losch 1954, Rushton 1972). Yet, all versions of the theory were in agreement that the theory was based on the premise that villages and towns exist to serve a dispersed population with needed goods and services. The theorists assumed that in areas where such developed patterns of spatial interaction did not exist, (either for social or economic reasons), the spatial organization patterns predicted by the theory would not exist. Yet that was exactly the case in most of rural India. Nevertheless, in the writings of Indian Regional Planners who commented on central place theory in this period, the assumption was implicit that the deductions of the theory could be used as a norm

for planning. The problem of identifying the spatial structure that would be optimum or even would meet minimum criteria was not seen as a difficult problem. Ensminger and Roy wrote that "The central place theory has become one of the principal tools for regional analysis and planning," (Sen 1972, 20); and that, "Techniques for identifying the primary growth centres are known and can be applied with appropriate variations in any part of the country. Subsidiary centres can be identified and their functions planned by the same techniques," (Sen 1972, 18). The experiences of Poland were cited in support of this position, (Fisher 1966; Meria 1966). Thus techniques developed to test whether the deductions of central place theory were present in an area became the normative tools for planning the alleviation of problems of spatial linkages between villages and service centers. Isolated arguments that it was the logic of spatial organization to satisfy defined objectives that was the aspect of the theory that should be used in planning, were not accepted, (Rushton 1972, 212). Instead, the basis of planning were the theorems from the theory that were based on assumptions of behavior known to be false in the Indian context and assumptions about the existence of patterns of spatial linkages which, if true, would have spared the need for the type of planning upon which the Indian Government embarked in 1970.

Indian Government Sponsorship of Micro-Regional Planning

It was in this context that the National Government sponsored a major project in spatial planning which became known as "The Growth Centre Project". The objective of the project was described officially in the Government's Fourth Five Year Plan (1969-1974) as:

"The aim of the pilot project will be to evolve a broad research methodology and pattern for identifying emerging growth centres, and to indicate how the growth potential of these centres could be promoted through comprehensive and scientific study of the overall development needs, and how these centres could be meaningfully woven into the frame of the district plan and thus help in the process of planning from below. The scheme will thus bring under close study action strategies relevant to the acceleration of integrated area development around potential growth centres." (Planning Commission 1970, 229-230).

The project was administered by the Department of Community Development of the Ministry of Agriculture. The Government of India staffed a small managerial group at the Centre and funded twenty field cells of approximately five persons each which were assigned by state governments to the study areas. (The study areas, called Community Development Blocks, included an average of 125,000 people and 125 settlements of which between one and four could generally be called market towns). The Ford Foundation funded and staffed, either directly or by contract with Indian institutions, a Central Research

Cell in New Delhi of twenty-five professionals and twenty-five subprofessionals. The Centre's managerial group was responsible for administration of the Project, the Central Research Cell was responsible for substantive direction of the Project's research, and the field cells reported to each. Four Westerners, (C.P. Andrade, H.B.Fisher, G.Hursh and G.Rushton) worked with the Central Research Cell during substantial portions of the Project. The balance of the Project's staff, numbering more than 150, was comprised entirely of Indian nationals. The approach of the government's research group, The National Institute of Community Development, Hyderabad, which organized three training institutes of the field officers of the project can be seen in two books published at that time: (Sen et al. 1971; Sen 1972).

The project scheme was described in April 1969 in a note prepared by the Community Development Department of the Ministry of Food, Agriculture, Community Development and Cooperation:

"The Scheme: The pilot project scheme has been drawn up to locate rural communities round potential growth centres in terms of an area with an economic base and a range of population sufficiently large to support a package of economic and social services so that the process of development is sustained and accelerated through the common interest and energetic support of the people. Already, spurred by buoyancy in agriculture, and other investment activities in the rural areas, a number of market towns or potential growth centres are emerging which have, around them, identifiable groups of

associate villages. Perspective planning for the rural area, would require notice being taken of this phenomenon and planned effort being made to identify these growth and service centres, delineate villages which are likely to be associated with them as they develop, and provide the services and infrastructures the villages will require. The pilot project scheme is designed to provide insights and action strategies for such planning."

"The deliberate promotion of growth centres as an instrument of rational rural planning has been tried in countries like Bulgaria, Poland, France, West Germany etc. The experience of these countries are that growth centres policy takes advantage of two facts: the fact that, in the development process, certain kinds of concentration or agglomeration bring economies of scale, and the fact that development, viewed as a process of innovation as well as growth, does not appear everywhere at the same time, but manifests itself at favoured points, from which, depending upon the circumstances, it tends to propagate outside. A growth centre policy will try to favour both the concentration or agglomeration process and the outward propagation."

"Components of the Scheme: The scheme envisages field investigation and experimental research for perfecting the methodology to identify emerging growth centres and delineate associate villages around them and then take a look at selected areas to see how the scattered village communities could be welded into homogenous viable groups....."

(Source:Quoted in a Ford Foundation Staff Document, "Pilot Research Project in Growth Centres (India)," Appendix I, October, 1971.)

(Footnote: The most complete description of the background to this project is a staff document of The Ford Foundation, "Pilot Research Project in Growth Centres (India)," October, 1971; a less complete but more accessible source is Shah, 1973).

The objectives of the project are described in a Project Design Note approved in May 1971 by The Ministry:

"This Project is a research-cum-action experiment designed to develop, test and apply a methodology for the optimum provision of the economic and social activities of all people in a given spatial area. The study will be focussed on the identification of a hierarchy of viable rural growth centres and their related communities to provide for present and to anticipate predictable future needs. More specifically the objectives of the Project would be:

1. To study, in selected rural areas, focal points of growth with ecological settlements coming within their ambit and to suggest what should be the optimal scheme of hierarchy of growth centres for the most economical efficient provision of goods and services.

2. To specify the functional gaps in the physical and institutional infrastructures of these centres and related

settlements for present and future needs.

3. (a) Taking cognizance of the resources available and likely trends of spatial and temporal patterns, plan alternative courses of action for selected functions such as agricultural markets, agro-industries, credit institutions, industries, education and health.

(b) Coordinate the planning function with the implementation process so as to secure the integration of chosen programmes in the process of decisions leading to their adoption and implementation.

4. Develop methodologies for the selection of variables, collection and analysis of data which would facilitate comprehensive and scientific study of overall development for the subsequent rounds of study, analysis and planning.

5. Carry out evaluation studies to assess the impact of infrastructure investments made as a result of plans implemented in the first study area."

(Source: Quoted in Ford Foundation Staff Document: "Pilot Research Project in Growth Centres (India)", October, 1971.) Further discussion of these objectives and the broader purpose that they were intended to serve is described in the papers by Andrade and Ensminger

and Roy, (Sen 1972, 10-21). As part of the preparation for this project, a team of professionals from the National Institute of Community Development, Hyderabad, led by Lalit K. Sen, conducted two pilot studies that are extensively described in two books, (Sen et al. 1971; 1975). Descriptions of some of the results of the Growth Centre Project work are described in Banerji and Fisher, 1974a, 1974b; Roy and Patil, 1977; and Fisher and Rushton, 1977 and 1980. A more complete list of publications of the project can be found in Roy and Patil, 1977, p.124.

#### The Approach of The Growth Centre Project

A Central Research Cell for the project was set up in Delhi. It was responsible for developing a unified approach and a common information system that would be based on survey instruments used in all areas. Their approach was to develop in a series of workshops an integrated area development plan for each study area (Block). This could not be accomplished in any one attempt because the integrated plan was seen to result from the interaction between a "general settlement plan" and particular "sectoral plans" dealing with the problems of individual sectors. If the integrated area plan were to meet the needs of the different sectors and if it were ever to be

implemented, it was seen to be necessary to involve the organizations and institutions who were involved with planning and administering the sectoral programmes such as health, education and marketing. This was the "planning process" part of the approach. Equally important was the common philosophical and analytical basis of the plans. The plans that would be discussed at these seminars and with the organizations and institutions within the study regions had to meet five principles:

a) The "service standards" for individual public services would be met. Equivalent "standards" for private sector activities would be estimated and any proposals for private sector activities would meet these norms.

b) Where different norms and standards exist for different activities, an attempt would be made to reconcile these standards so that "spatial integration" of activities in some form of "spatial hierarchy" would occur.

c) The resulting integrated area development plan (IADP) should be consistent with and should build upon the current pattern of urban functions.

d) An important component of the plan would be the plan for development of transportation and other "spatial linkage"

infrastructure.

e) There should be an active interest among most sectoral decision-makers in assisting in the development and in implementing the IADP.

#### The Five Principles- Discussion

##### 1. Planning Norms and Standards.

Different Government Ministries set standards for the minimum acceptable levels of geographical access to services that they assist in providing in rural areas. Commonly these are expressed in terms of critical distances that villagers should have to travel to reach the service and of the critical number of people needed, from an economic and organizational viewpoint, to support the effective offering of a service. It is generally recognized that in areas of low population density, either the critical distance must be extended or the "threshold population" level should be relaxed. Similarly, in areas of unusually high population density the threshold population can be realized within a much smaller average distance separation. For the private sector, the equivalent of the norms of the public sector are the conditions needed to support the offering of urban functions for each activity. These standards and norms were collected or estimated from interviews with, or from the written

record of, the different sectoral departments or private enterprises. An example of the standards for primary health services is found in Roy and Patil (1977, 64-65).

## 2. The Spatial Integration of Activities.

The argument for spatial integration is well-known: spatial integration of urban functions in a few places allows a reduction in the amount of villager travel since on any single trip each can satisfy a variety of needs; that the requirements for investment in transportation are reduced since, with integration, in place of roads that link all centres, transport improvements need only focus on linking villages with their local service center and with linking successively higher-level service centers; finally, spatial integration allows economies in the offering of services because the close proximity of the different services enables them to share in the payment of the fixed costs associated with the place that otherwise they would have to bear alone. Accordingly, the approach emphasized the principle that services should be spatially integrated in a hierarchy of service centers providing all individual sectoral norms were met. In practice, however, as Fisher and Rushton noted:

"The disadvantage of such a hierarchical organization of activities is that the distance standards and other requirements of individual activities must be adjusted and grouped at discreet levels. Frequently,

individual standards must either be stretched to fit into one level of places or shortened to fit into a lower level set of places. In the first case, the maximum distance of villages from their closest centres with the required activity may be unacceptably long and, in the second case, the number of facilities that would be required might be more than investment funds permit or that can economically exist".

(Fisher and Rushton 1977, 345).

This act of reconciliation of conflicting norms requires the participation of affected sectoral departments. A significant hurdle to its effective accomplishment is that sectoral departments, particularly at the local level, often have no authority or discretion to alter standards that have been set by higher levels of authority even though the same authority may have preached to them the virtues of cooperating with the planners of other sectors to achieve the spatial integration of different services! Roy and Patil discuss the problem of reconciling conflicting standards especially in relation to the issues of equity and efficiency, (Roy and Patil 1977, 32-34).

### 3. Consistency With the Current Pattern of Urban Functions.

In order to apply this principle it was necessary to identify the current spatial organization of urban functions in relation to

the rural population. A number of techniques were either adopted or developed to do this. One was the scalogram of functions and places. The purpose was to rank places according to their functional complexity and to rank functions by their relative frequency in the region. The intent, in both cases, was to identify "the existing urban hierarchy" so that its effectiveness could be assessed for meeting the current needs, standards and norms of the important social and economic sectors of the region. This consistency principle, although rationalized as needed from an economic point of view to take advantage of current infrastructure and linkages between places, and, politically needed, in order to support the activities already in place for which past commitments of support had often been granted, was nevertheless a second source of conflicting standards complicating the planning task. If it were not already difficult enough to plan for the location of urban functions when each sector independently agreed upon and promulgated its own "spatial norms," the addition of the further requirement that existing relationships between places be recognized and respected in plan development made the task of formulating an Integrated Area Development Plan exceedingly difficult. The classic answer of formal planners to conflicting standards has been to speak of "multiple objective criteria" where preferences for trade-offs between criteria that cannot simultaneously be met are formulated by decision-makers and the planners task is then to proceed to implement these preference functions and to show the decision-makers what in reality can be

achieved in the given context. But such a world, though talked about by the Growth Center Project Central Research Cell Staff, never existed in the pilot areas. This principle does, however, illustrate the problem of planning for urban functions in rural development and simultaneously satisfying three commonly stated principles of regional planning: plans should satisfy individual sectoral standards and norms; plans should be spatially integrated so that the activities of different sectors will be functionally related in space; and, plans should be consistent with and build upon the existing spatial structure of urban activities. One lesson the growth center project planners learnt was that three such simple principles could comprise the dimensions of the regional planners' pandora's box!

#### 4. Simultaneous Development of The Transportation Plan.

Once again, a simple principle that none would dispute posed a problem to the growth centre planners. Whether the existing transportation system should be the basis of plan development or whether the plan should be based on a transportation infrastructure development plan was the question. The assumption that linkages between settlements in the future will have adapted to the new transport structure, seemed a reasonable assumption but clearly a plan for urban functions based on that principle may not meet current standards for rural access to essential urban functions. Accepting a "forward look" to the future transport structure put the planners

dangerously close to incorporating the task of the transport planners and, at the minimum, added a new group of people with whom the planning team must interact. In so far as transport structure planning in India is in the hands of several different administrative levels of government, the task of coordinating and cooperating is formidable.

#### 5. Participation of Sectoral Agencies in Plan Development and Implementation.

This principle recognizes both the authority and duty of administrators and decision-makers in the sectoral departments or in the private sector to make and to justify their own decisions in organizing urban services. It also recognizes the special knowledge and ongoing administrative responsibilities of these people that cannot be ignored if good decisions are to be made. Accomplishing such a principle of involvement was difficult. The actors were difficult to identify by local planners whose status in the Government Bureaucracy was considerably less than many of the people whose decisions they hoped to influence.

#### Implementing the Principles

The four sources which describe the procedures which were followed in developing and implementing the "Integrated Area

Development Plans" in the Pilot areas. The brief description which follows is taken from these sources. One is an unpublished paper delivered in the final months of the project by two of the senior staff of the New Delhi "Central Research Cell" of the project, (Andrade and Fisher 1974). Another source is written by the Technical Director of the Research Cell (Prodipto Roy), as a Manual to be used in the field by others who later might replicate the approach (Roy and Patil 1977). A third source is the series of books describing the approach and its implementation in several areas of Andhra Pradesh by the Director and Colleagues of the Training Institute for the field workers in the project at the National Institute for Community Development, Hyderabad, Lalit K. Sen. These were written in the early years of the Pilot project and were written by a group that was working largely independently of the New Delhi group. There are some important differences in approach by the two groups. Finally, I will refer to a source that differs from the other three in that it is a book written by one of the field officers of one of the twenty projects on his own area development plan and planning process (Shah 1974).

The approach in these studies followed the following sequences of activities.

1. Baseline survey of resources and problems.
2. Collection of secondary and primary survey data- the information

system.

3. Seminar-workshop to develop a "Preliminary Draft Plan"
  - a) General settlement plan
  - b) Sectoral plan for selected sectors
  - c) Integrated area development plans
4. Discussion of proposals with local, district and state officials and other interested persons.
5. Revision of plans and local approval of plan.
6. Submission of plan to Community Development Department.
7. Implementation of plan through normal sectoral decision-making and request for special allocation to Community Development Department.

#### Discussion of the Analytical Basis of These Activities.

The baseline survey of resources and problems was an early phase in which the particular development problems of each area were described to the field staff by people in the area itself. The purpose was to glean the insiders' views of the problems and

potentialities of the area. Through group interviews the field officers would lead the discussions to the role of urban services and the problems that existed in the area that might be affected by improvements in access to urban services. Other activities that would promote the development of the area were also identified. The survey of secondary data was done to provide a more objective base for these discussions and to identify the existence of any particularly disadvantaged population groups whose views and concerns might otherwise be missed.

The information system was developed in a uniform way for application to all twenty pilot areas and was intended to provide, at an early stage of the planning process, the information essential for plan making that did not exist in other sources. In the early stages of the project survey questionnaires containing thousands of data elements were developed for sample households, settlements, artisans, industries and sundry other activities. A foreign consultant was brought to the project to work full-time for approximately two years to assist with the design, testing, and final implementation of this survey. Much of the information was coded, keypunched and analyzed in New Delhi by various groups under contract to the Central Research Cell with the results returned to the staffs of the field cells. The survey had been the idea of the panel of advisers to the project set up in the early days. Completing it consumed a large proportion of the time and energies of all involved in the first two years of the project and the result was a serious delay in focussing the attention

of the planning groups on the task of project identification and plans for implementation.

The "Preliminary Draft Plan" and the processes associated with its development was the heart of the planning approach. The purpose of the "General Settlement Plan" (GSP) was "to develop an initial and general framework for the spatial organization of a study area" (Andrade and Fisher 1974, 8). It proceeded by "identifying those settlements at each of several nesting levels of spatial hierarchy which are more accessible than other settlements studied..."; (Andrade and Fisher 1974, 8). Operational criteria were defined and heuristic techniques of locational analysis were used to identify the settlements which optimally met the stated criteria, (Rushton and Kohler 1973; Teitz and Bart 1968). The criteria were selected to correspond with the stated standards of geographical accessibility for important services such as health, education, agricultural inputs and marketing; (Fisher and Rushton 1977 and 1980). Later in the course of the Project, manual methods were developed to test in some of the pilot areas whether field officers could apply the concepts of accessibility analysis and, using graphical and other estimation techniques, approximate the results obtained using the computerized algorithms. A direct comparison of manual and computerized techniques was made in one study area. Several replications of the comparison between techniques were made for the same study area. These experiments led to the conclusion that the variability in efficiency of the manual solutions increased as more local levels of

the settlement hierarchy were evaluated. At the lowest level of the urban hierarchy, manual techniques resulted in plans for which the average person distance to the closest of a given number of settlements at the lowest level were from eight to twenty per cent greater than in the equivalent computer produced plans in the different replications of the experiment; (Fisher and Rushton 1977, 353). The final step in preparing the General Settlement Plan was to compare the most accessible settlements with the results of the survey of the urban functions in the settlements at the time. Over large parts of the study areas the most accessible places were also the most functionally complex in their local area but occasionally cases existed where small changes in the GSP to favor the already developed places would result in a plan that was more consistent with the current pattern of urban functions without violating the original access criteria by more than a small margin.

The sectoral plans were a major component of the IADP. It was recognized from the beginning that most of the resources for implementation would be resources originating in the sectoral departments at either the State or National Centre level. Roy and Patil (1977, 35-84) devote the greater part of their Manual to a discussion of sectoral plans. Formulating these plans began with an analysis of existing conditions in the sectors to establish norms (Roy and Patil 1977, 28-29), and comparing these norms with standards for delivery of services in each sector based on national and regional policies. Plans for new facilities or other changes in

the delivery system were then proposed (Andrade and Fisher 1974, 11).

The Integrated Area Development Plans were developed by a process of discussions at the local level among individuals and organizations concerned with sectoral activities, transportation development planners, and the general administrative personnel for the area. The process was often a long one involving both horizontal coordination among different agencies at the local level and vertical coordination with agencies at higher administrative levels. Estimates had to be made of the effects of changes in any one sectoral plan on its own efficiency and effectiveness as had also the impacts on other sectors. Cost estimates of projects had to be made and allocated to the different years over which the implementation would be made. Priorities among projects were to be made at this stage.

#### Plan Implementation.

The first step of implementation involved the "clearance of plans through the district and state level coordination committees." The second involved the persuading of "state and district development departments to sanction the investment proposals in each plan, thereby scheduling their implementation by on-going expenditures of governmental line agencies;" (Andrade and Fisher 1974, 12). A

third step involved interaction with the major independent public-sector undertakings such as the nationalized banks or the electricity generation organizations to persuade them to recognize the plan in their own planning and implementation process. Indeed, it was under the sponsorship of such undertakings that many later Integrated Area Development Plans were developed. The 1980 study by Misra and Kundu was sponsored by The Rural Electrification Corporation, New Delhi (Misra and Kundu 1980).

#### Administrative Decentralization of Decision-Making

Looking at the activities in the Pilot Regions, one might assume that a decision had earlier been reached that some decision-making powers, normally reserved for a higher administrative level, had devolved to the Block Level. After all, the experiment in Block Planning contained the implicit recognition that local planning, to be effective, must be based on local expertise about the local geography, both physical and human of the locality. Authority for such decentralization of decision-making had not, however, been given. Failing that, one might expect to see a process of coordination with a plan for the larger region of the District (which typically might contain eight Blocks). Such a process would emphasize the prioritizing of projects advocated in the plan in an attempt to place the implementation plan of the IADP within the

resource constraints available and to seek consistency with the plans of other localities which, after all, may well require inputs from the locality in question or otherwise impact on its development. No well-defined process for achieving this was developed within the life of the Growth Centres Project. The reason for this appears to be as much the fact that such "District Development Plans", which are the responsibility of the District Collector and District Development Officer, are usually "collections of sectoral claims on resources, rather than the products of comprehensive analysis and synthesis of needs, resources and objectives." (quoted from an unpublished paper by C.P.Andrade, "Urban and Regional Planning in India in the Seventies," 1971).

These Pilot Projects occurred in an administrative vacuum. Plans were being prepared as if some administrative apparatus existed for the planning and management of rural development and its integration in the structure of government. Though it was hoped that eventually some such organization would exist and that the achievements of the Pilot Groups might lend support to the argument that such changes should be made, any inquiry into the extent of successful implementation of the plans should recognize that there were no formal links between the planning groups and any administrative authority which could legitimately assume the tasks of implementation.

Assigning the Task of Integrated Area Planning to the States.

At the close of the fourth five year plan (1974), the Central Government assigned the responsibility for such planning to the States and terminated its own involvement in The Growth Centre Project. Since then, the administrative region of the district has become the planning unit for area development planning and this unit now has "both the executive and financial powers to implement programs of development," (Wanmali 1983, 53). No systematic study exists of how states and districts have reacted to this new responsibility although the states of Andhra Pradesh and Punjab have retained formal area development planning as a distinct entity in state government.

In 1977, The Government of India Planning Commission- the permanent Central Government Group charged with formulating development plans and advising the Government on financial allocations to sectors and areas for the five year plan periods, set up a "Working Group on Block Level Planning," (G.O.I. 1978). In the chapter, "Spatial Planning for Socio-Economic Infrastructures" (G.O.I. 1978, 19-22), the report expresses the need for spatial planning and carefully defines the activities for which spatial coordination of locational decisions are necessary. A later memorandum on the subject to the Chief Secretaries and Planning Secretaries of each of the states (G.O.I. Planning Commission 1979), contains a description of the processes that States should follow in

implementing Block Level Planning. It notes, for example, that "Formulation of a plan and its implementation cannot be meaningfully separated. Hence those who have to eventually implement the plan should be closely associated with its formulation," (G.O.I. 1979

7). It also describes the "administrative adaptations" that would be necessary for effective planning: "For instance, it would mean that all functionaries of the line departments are brought under the control of a Senior Chief Block Officer so that effective coordination would be possible at the block level. In some States, steps have already been initiated in this direction." (G.O.I. 1979,

5). Clearly, by 1979, the principles of spatial planning and spatial integration of services in urban areas, (rural growth centers and rural service centers), had become the policy for Indian planning practise.

#### Studies of IADP Implementation and Effectiveness.

With the exception of the study by Wanmali (1983), there have been no follow-up studies in India to assess the extent of plan implementation and to evaluate the effect of the improved provision of urban services on the welfare and productivity of rural populations. Wanmali's study is based on a re-survey of the first pilot study of the Growth Center Project in Miryalguda Taluka (Sen et al. 1971). He found that most of the urban services recommended

in the 1968 plan had been introduced either by government or private initiative by 1978. Much of the area in question had become irrigated under a new scheme during the decade and many important infrastructure improvements had been associated with this scheme. His study shows that large increases in agricultural production had occurred in the decade and that the greatest increases in services associated with agricultural inputs and marketing occurred in the irrigated part of the study area. Because the study region had been the first pilot region, none of the normative techniques later developed by the Growth Center Project were used in the development of the plan recommendations. Wanmali's recent comparison of the situation before and after the plan does not measure the locational efficiency of the new investments in urban services. His study allows us to conclude only that new outlets for the twenty services provided by the government were constructed and that substantial increases in production occurred at the same time.

It would be worthwhile to set out what information an ideal follow-up study should and should not provide. I can see no merit in measuring "changes in centrality" of settlements before and after plan implementation where "centrality" is defined as some ranking or measure of the functional complexity of a settlement involving an additive weighted function of the kinds of activities located in the center. I do not know how to assimilate such information nor what can be concluded after knowing it. I do not see the merit of analyzing those places for which recommendations in a plan were made

to introduce services when the changes in services in other places where the plan make no such recommendations are not also investigated. Wanmali's study does not answer the critical normative questions. He notes that:

A large number of new services were established during the period. Thirty new primary schools, 2 middle schools, 7 secondary schools, 29 primary credit societies, 8 rural banks, 14 branch post offices, 13 centers of fertilizer distribution, 7 centers for distribution of pesticides, 10 animal husbandry centers, and one regulated market (with 2 subyards) were established by the government. In the private sector, about 514 kirana stores, 114 retail cloth stores, 78 general provision stores, 12 hardware stores, 21 pharmacies, 30 restaurants, and 216 tea and coffee shops were established in the taluka.

And 3 weekly markets appeared in the rural areas in addition to the 2 that already existed.

(Wanmali 1983, 37).

In this study, there is no analysis of the locations selected for these services to establish whether the sites selected could most efficiently serve the populations in need. No analysis is made of the degree of spatial integration of the urban functions and no analysis is made of the trade-off decisions which the government

clearly would have to have made when reconciling the individual service standards of each of the twenty services examined. It is true that the original Miryalguda study had not formally raised these questions but this is not reason for neglecting them ten years later after their relevance had been established in the later Growth Center Project studies.

#### Comparison of UFRD and Growth Center Project Approaches

##### Similarity of Objectives.

One cannot but be impressed with the similarity in objectives of the Urban Functions in Rural Development Projects sponsored by USAID and the host governments of The Philippines, Upper Volta and Bolivia in the past five years and the objectives of the Growth Center Projects in India. The basic rationale for UFRD is contained in Rondinelli and Ruddle (1978) and detailed accounts of the implementation of the approach in two of the three countries have been published; (Rondinelli 1980; Rondinelli and Evans 1983; Evans 1982). It is from these sources that I will make my comparison with the Indian materials previously referenced. A quick comparison of

the objectives of the India project with UFRD objectives does show a difference in that the Indian objectives focus on the identification and promotion of rural growth centres whereas the UFRD approach focusses on the need to bring urban services to the rural population in order to promote their development. It is clear in both projects, however, that these aspects are two sides of the same coin. The approach of the Indian project was to focus on meeting the needs of the rural population through the most effective location and organization of urban services. Where these activities converged in geographical space, there the growth foci or centres would emerge. As Sen, et al. remarked: "Growth centres are central places which service a hinterland consisting of a number of villages. They provide optimal locations for selective investments in agricultural and industrial infrastructure, and social facilities which can be used by the hinterland population;" (Sen, et al. 1975, 61). One sought in its title a description of anticipated effects, (growth centres), whereas the other sought to identify its title with the causes of change with which it would work, (change in urban functions). These titles were not unimportant since, in the Indian case, the focus on rationalizing location decisions to achieve a purpose is more immediately conveyed by its title than the UFRD title which, more neutrally, does not direct an approach with a normative bias. Perhaps this is stretching too far a rationalizing of events that happened. Nevertheless, a principal difference of the two approaches is the normative theme of many of the techniques used in

the Indian approach to match the interpretation of their task.

#### Normative Nature of the Questions.

If the point of departure is that scarce resources are to be deployed and therefore the intent is to allocate them spatially where they will reap the most benefit, then clearly the question is a normative one. Decision makers must define, precisely, the objectives to be accomplished and the measure of benefit they wish to use in comparing alternative possible patterns of spatial allocation of the resources. Implicit in these questions is the need for cost-benefit analyses of alternative, geographically specific, resource allocations. Not a simple task so how can it be simplified? The Indian answer was to design analyses that would identify combinations of locations and activities that would supplement and complement current patterns of resources to optimally meet stated criteria within a budget constraint. Analyses were not to be a "background" to project identification, they were to positively identify projects that had a high likelihood to be chosen because they had been algorithmically designed to meet the decision-makers pre-specified criteria and preferences.

The Indian Project attempted to cast many of the critical planning questions in these terms and made some important advances in formalizing them so that they could be solved with existing

operations research techniques. Equally important was their achievement in developing and testing human analogues (manual techniques) to some of the more complex mathematical algorithms that are generally used in many Western cases of service location decisions, (Larson 1980). They discovered that the solutions provided by these methods had an acceptably low degree of error and that, in any case, were superior to alternative approaches such as functional gap analysis, centrality scores, (Sen, et al. 1971), which they supplanted.

#### Spatial Focus.

Both approaches placed a central focus on the spatial dimension of development. In both cases the approach was to examine the locations of existing urban functions, at the variation in levels of geographical accessibility to them and at the functional and spatial gaps in the system. Proposals for changes in the system were designed to solve the problems identified in the examination of the functioning of the existing urban system. In the Indian case, the analyses were fewer and focussed very specifically on the goal of identifying projects for investment that would be considered for inclusion in the area development plan whereas, in the UFRD approach six steps in the analysis are to be completed before such questions become the focus of attention and, at that point, the role of the

analyses are to provide background information helpful to the planners in finding and evaluating alternative interventions (Evans 1982, pt.2, 42). After assembling the basic geographical information system, the Indian approach immediately moves to answer these specific questions.

1. Analyses to Evaluate the Current System.

What are the "performance levels" of the current urban system in relation to stated regional or national standards?

Who has what level of access to what service?

Where are levels of access to services the poorest?

2. Analyses to Evaluate Alternative Interventions:

Who would benefit, which areas would benefit and by how much would they benefit if each of the alternatives were to be implemented?

How would the benefit levels, in each case, alter the proportions of the population whose access to services meet the stated standards?

3. Analyses to Identify Good Interventions.

What single change to the current system of urban services would most improve the access of the rural population to a given service?

It is difficult to explain or to understand the choice of non-normative techniques within the UFRD approach coming as it does at the close of a decade in which Operations Research Approaches had

increasingly been applied to find solutions to service location problems, particularly facility location problems (Thisse and Zoller 1983; Fisher and Rushton 1980), and following the completion in India of a major project with goals so similar to its own.

#### Appropriate Level of Technical Skills

In both the Indian and the UFRD approach the need is frequently expressed for simple, comprehensible methodologies. Just as one would argue for the adoption of appropriate technologies for use in production processes in developing countries, so one would argue that essential analyses should be within the range of expected skills of those who will use them in the future. In commenting on the use of the optimizing algorithms in the Indian Growth Centre Project, Andrade and Fisher wrote that "Development and application of these location algorithms represent one of the major contributions of the Project to the literature of planning techniques... Moreover, we find that these applications have great intuitive appeal to field-level planners and provide a rare example of quantitative sophistication that is blended easily into traditional planning processes." (Andrade and Fisher 1974, 9). Earlier, I described the Indian Projects' experiments to simplify these algorithms for field use where computers are not available.

Analysis, Project Selection and Implementation.

Reviews of both approaches have commented on the difficulty of striking a balance between data gathering and analysis and project selection and implementation. In the case of India, advisers to the projects themselves "have criticized the program for its pre-occupation with detailed data collection, especially during the early phases, and for its inability to completely overcome this initial error." (Chetwynd 1978, p.3). In a similar vein, Evans commented on the expenditure of time on analyses in the UFRD Bolivia project "at the expense of rushing through the less familiar tasks of identifying and selecting projects, allocating investments, and coordinating activities for program implementation. In retrospect, this tended to happen in Potosi, and slowed progress towards project design and investment planning." (Evans 1982, pt.2, 53).

#### Relationship of Analyses to Implementation Plans.

The administrative organization within which the planning efforts were carried out can be compared. The UFRD activities in Bolivia and The Philippines were undertaken under the aegis of Regional Development Corporations that were connected through formal mechanisms to their respective National Planning Systems. Evans has noted the difference between the levels of consultation and cooperation that the administrative machinery in Bolivia is designed

to achieve and the levels of consultation, coordination and cooperation that are in fact achieved (Evans 1982, pt.2, : 10-16). The two UFRD cases differed in that in one, Bolivia, the "responsibility for the analyses, plan-making and implementation were all assumed by the same organization whereas, in The Philippines, parts of the analysis were subcontracted to a University based research consortium." In India, however, there were no such ties linking the planning units in the Pilot Areas to the National Planning Commission, even indirectly and, on occasion, sectoral ministries at higher administrative levels were learning for the first time of the Pilot planning projects when they received requests to sanction projects that had been developed in the local planning process.

### Conclusions

The Indian experiment in planning urban functions for rural development from 1970-1974 closely paralleled in its objectives USAID's later Urban Functions in Rural Development (UFRD) project. Although the latter began after the Indian project was finished, there is little evidence to suggest that it was influenced in its approach by the approaches and the experiences of the Indian project. It is interesting, therefore, to assess the Indian experience and to

compare it with the UFRD approach. The Indian approach, after a start that many observers believed to be a false start, decided that the core questions were normative questions involving the changing of many patterns of spatial linkages in order to connect disadvantaged villages to the full range of supportive urban services. The project tested some simple optimizing (heuristic) algorithms (some computerized, other not), designed to evaluate existing levels of geographical accessibility to urban services and to identify interventions that were optimal with respect to defined criteria. Further evaluation of these interventions by parties concerned led to the development of plans for improvement. Implementation plans were caught, in 1974, in a crossfire of administrative reassignment of responsibilities for area planning from the Community Development Block level, at which the Project had been organized, to the District level as it became clear that the integration of rural areas into the urban service system is more appropriately realized at the scale of the District (approximately two million persons per District) rather than the scale of the Block (approx. 130,000 persons per Block). The false start was the early emphasis on large social surveys for which the time and skills needed to process the data were not available and which provided data which, though useful to the task of planning, was not essential. This activity occurred at the expense of more inter-personal and inter-institutional contacts in the field which could have built up political support necessary for project implementation. The canceling of "The Minimum Needs Program" in 1975

as a consequence of severe Central Government budget problems following increases in the price of oil in 1974, also meant the withdrawal of one of the primary sources of funds for project implementation.

Although others have better access than I to materials describing the UFRD approach, published materials as well as my own observations following my visit to The Bicol River Basin (The Philippines UFRD site) in 1978 when the project was at its approximate mid-point, support the view that UFRD in The Philippines also embarked on an ambitious data collection plan some of which involved original survey work. In addition, there is no evidence that the Bicol project ever designed its analyses to answer the critical questions of optimal interventions to re-design the pattern of rural to urban linkages in order to achieve the stated ends. The analytical approach there, relying on the filling of functional gaps as identified in the scalogram analysis, is, in my opinion, a faulty approach that could lead to substantially inferior resource allocation plans. Use of this approach does not ensure that optimal integrated geographical organizations of urban services will be identified. In this respect, a careful consideration of the technical approach of the Indian Growth Centres Project at that time, would have yielded substantial benefits to UFRD. The later Bolivian UFRD Project did benefit from the realization that data collection tasks should be simplified and shortened in time, and did add to the Bicol analytical approach the first steps of a normative approach in

its "accessibility analyses." Nevertheless, it failed to take this model as far as the Indian project had reached ten years earlier.

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