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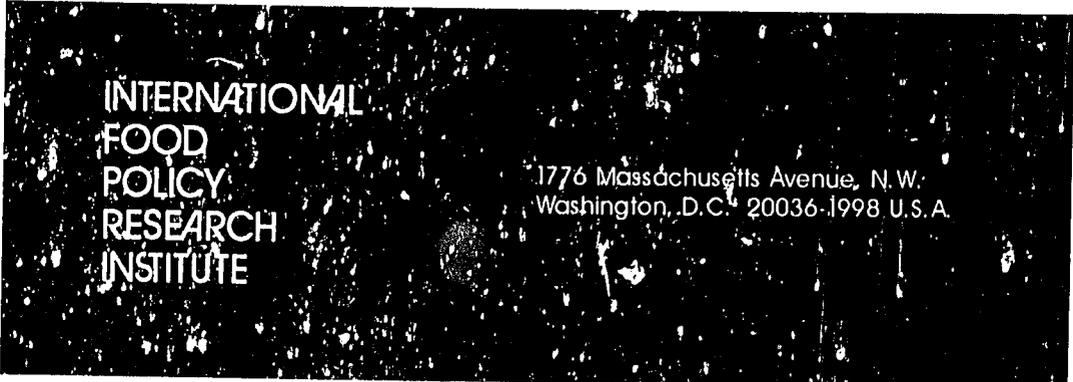
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# **Spatial Intervention, Settlement Systems and Rural Development in India**

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# Spatial Intervention, Settlement Systems and Rural Development in India

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*Spatial intervention is the one where a new function/service is introduced in a region's settlement system. Urban centres played an important role in this intervention. Interventions in the urban segment of settlement system did not help the development of rural areas. Studies on spatial intervention in Miryalguda taluk of Andhra Pradesh and Nagpur Metropolitan region are compared in this study.*

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## Spatial Intervention: Past Methods and Recent Evidence

**S**patial intervention is defined, for the sake of present discussion, as one where a new function/service is introduced in a region's settlement system. Interventions in the urban segment of a settlement system was, and still is, considered in India as a useful approach to rural development. It was assumed, in this approach, that if the urban centres had the necessary industrial and socio-economic infrastructure then the surrounding rural area would benefit from it. Thus for many years in the past, the strengthening of urban core (the area within municipal limits) and urban system (consisting of urban cores of varying importance and their rural hinterlands which are functionally linked together) with adequate industrial and socio-economic facilities was considered a viable strategy (4, 6, 7, 8, 9, 11).

In the analysis of such interventions, urban centres, urban hierarchies and urban-rural relationships have played an important part. For example, it is assumed by those who advocated such interventions that there exists in India an interconnected system of metropolitan cities which is supported by yet another system of large and medium-sized towns. Rural areas within these two systems were assumed to be disorganized. It was felt that if all growth and development inputs are located in metropolitan, and other urban areas their interconnected nature would help the distribution, and diffusion, of these inputs

in the rural areas (4, 6, 9, 12). This diffusion of development inputs was to have been achieved within a metropolitan, and an urban, region from the metropolis, and town, outwards, and downwards, to the rural hinterlands in a hierarchical manner; and within a system of metropolitan, and urban, regions from higher order regions to the lower order regions.

There is now enough empirical evidence to suggest that the above consequences of urban intervention would not automatically follow for a number of reasons. First there exists geographic, functional and spatial gaps in the urban system of India (2, 5, 13, 15, 19). Second, these gaps effectively prevent the outward and downward spread of growth and development inputs. Third, there is "functional friction" between the urban and rural sectors of metropolitan areas that has prevented the rural hinterlands from deriving the benefits of a metropolitan economy (1, 14, 17, 22). Fourth, the growth from heavy and basic industries does not diffuse to all centres in the surrounding region but primarily to those where the factors of production are located. Fifth, the types of developmental inputs which are in high demand in rural areas are services such as education, health, transport, communications, trade, agricultural input supplies, veterinary services and retail goods of various kinds (1, 10, 16). These appear to be mostly located in urban areas which, in turn, are largely inaccessible to the rural areas. Finally, the metropolitan and urban regions in India are not hierarchically organized so as to ensure a successful downward diffusion of development inputs (2).

In the industrial sector, new heavy and basic industries were located in the resource rich regions of India which hitherto did not have such industries. In order to facilitate their working, new towns, and townships, were established for manufacture of steel, copper, chemicals and petro-chemicals, aluminum, uranium, atomic energy, machine tools, engineering, electrical and defense equipment. The ease with which factor and product links were established in these industries added to the myth that these units are also capable of integrating their rural hinterlands. But what these industrial interventions achieved for rural development (apart from a spectacular growth in overall industrial production) was a very rudimentary form of integration with the surrounding regions. First, during the period of construction of these industrial centres, a large part of the rural population was employed as labour on the building sites. Second, the rural areas provided the inhabitants of the new industrial townships with vegetables, milk and dairy products, poultry and poultry products, meat and food grains. The nonfood producing population of the townships represented a captured demand for these goods. The new industrial centres were good company towns, having excellent facilities for education, health, communications, transport, banking and wholesale and retail trade; but these were rarely used by anyone except the employees of the industrial units. Incidentally, these were the very services that were needed to effect a quick integration of the centre and its rural hinterlands; but the industrial centres tended to keep these services to themselves, preventing the rural areas from integrating with them.

Whatever the reasons, with the exception of a few centres, these industrial townships often did little to serve the rural areas around them.

From the above discussion, it becomes clear that interventions in the urban segment of the settlement system did not improve the access to services necessary for the overall development of the rural areas at least not in the manner as it was envisaged by planners. What about examples of spatial interventions in the rural segment of the settlement system? These, as may be well be expected, are not as numerous as those noted above; nor are these as well researched to draw some broad based conclusions. But there are a few studies, which were originally conducted in the late sixties, and repeated in the late seventies (19, 20), the findings of which can be of some interest to the main arguments contained in the current discussion. The findings could be of further interest because the two regions where the studies were conducted have different regional economic characteristics.

### The Study Regions

Miryalguda Taluka, in Nalgonda district of Andhra Pradesh, is in the command area of Nagarjunasagar Irrigation Project and was provided with irrigation facilities in the late sixties. Simultaneously, attempts were made to make available some services which were considered necessary for the development of agriculture. Based on a field survey, plans called for location of specific services in 18 settlements (all villages), in addition to 4 that were already functioning as service centres, in the areas of transport, marketing, communications, credit, banking, animal husbandry, agricultural input, supply, health and education. The same region was resurveyed in the late seventies to identify the progress made in the previous decade.

Nagpur Metropolitan Region, in Nagpur district of Maharashtra, was first surveyed also in the late sixties. It was noted that the metropolitan city of Nagpur tended to have most of the higher order services (similar to those mentioned in the Miryalguda Taluka) and that although there were regional rural service centres, these needed to be provided with better, and new, services in order to make them more attractive, and accessible, to the surrounding population. This region was also resurveyed in the late seventies. The relevant findings from both these studies are noted below.

### Spatial Intervention and Settlement Systems

The Spatial intervention in Miryalguda and Nagpur Regions was in the form of locations of new services in settlements. In Miryalguda Region 20 out of 22 service centres, and in Nagpur Region 11 out of 13, were rural in character. This indicates that the rural segment of the settlement system was the focus of attention. Further, about 18 settlements chosen to be service centres in Miryalguda were not functioning as service centres in 1968; whereas in the case of

Nagpur the chosen 11 were already functioning as service centres and were selected for further "strengthening" of their functional span (20). The decline in the case of Miryalguda region was caused by new centres, once established, taking away parts of the service territory, and service population from old service centres. The increase in the case of Nagpur region was caused by the "strengthened" rural service centres expanding their areas of influence also at the cost of old service centres. In both cases, the old service centres were "urban" in character. There are instances in the Miryalguda region where the service population and area have increased; these are the services in whose number there was little change. As compared to the Nagpur region, the degree of inaccessibility obtained in the Miryalguda region, although declining quite impressively over the two points in time, is nevertheless quite substantial. For example, the extent of area served by all services in the Miryalguda region was 10.67 times more in 1968, and 6.62 times more in 1978, than in the Nagpur region.

Further, there has been an improvement in the provision of services in both regions (Table 3). In the case of Miryalguda region, the government sector services led the process of improvement in service provision whereas in the Nagpur region, it was the private sector which were the leading factor.

In both regions, the diffusion of services has taken place, and is continuing to take place, in a hierarchical manner. This is, perhaps, a consequence of the fact that in both regions the rural segment of the settlement system as a whole does not show many "gaps", that is, all size-groups of population are available within the regions; (for whether it is worth, it is interesting to note that the settlements systems of both the regions are becoming log-normal in distribution), and what there are no large tracts where there is an absolute absence of settlements of a particular size group. There were "functional" gaps in the settlement systems (in late sixties) which have now been filled (the functional system too are becoming log-normal in distribution).

The rural sector of Nagpur region appears to be interacting with its urban-sector through a series of dynamic changes, where the government sector appears to have assumed the role of a "facilitator". For example it announces sectoral policies, or decisions, and facilitates their implementation. These together help in the growth of the regional economy. The actual execution of the policy, in most cases, appears to have been left to the spontaneous forces. In this important sense, the government sector is playing a secondary role, to that of the private sector, in the overall process of development (20). This is in contrast to a situation in Miryalguda region where the government was seen to be responsible not only for the declaration of a policy and facilitating implementation but also in the act of executing some of the policies and decisions (19).

**Table 1**  
**The Miryalguda Region: Service Area and Service Population**  
**of Services: 1968-78**

Service	Service Area		Service Population	
	1968	1978	1968	1978
	(in sq. kilometers)			
Primary School	25.64	25.64	4,980	4,220
Primary Credit Society	38.69	26.05	6,735	4,420
Centre for Medical Checkup	33.61	25.79	5,832	4,822
Bus Stop/Service	86.97	75.13	14,257	9,087
Branch Post Office	42.68	57.70	6,298	7,259
Middle School	33.22	26.21	6,980	5,822
Sub-Post Office	365.16	433.72	44,240	54,920
Animal Husbandry Centre	667.23	116.47	57,273	14,767
Secondary School	230.92	124.21	27,856	15,539
Allopathic Treatment Centre	70.13	83.44	10,832	10,699
Rural Bank	771.71	236.46	92,645	29,683
Junior College	739.75	623.05	93,283	96,826
Surgery and Hospital	739.75	623.05	93,283	96,826
Post and Telegraph Centre	739.75	623.05	93,283	96,286
Nationalized Bank	1479.51	623.05	93,283	96,286
Fertilizer & Pesticides Centre	728.81	728.81	222,339	232,366
Cooperative Bank	728.81	728.81	222,339	232,366
Seed Distribution Centre	728.81	728.81	222,339	232,366
Veterinary Hospital	728.81	728.81	222,339	232,366
Regulated Market	—	728.81	—	232,366
Retail Kirana Stores	32.81	32.81	5,414	4,220
Retail Cloth Stores	83.47	118.08	10,395	14,060
Tea and Coffee Shop	28.36	27.32	6,360	4,220
Hardware Store	673.11	459.77	91,992	57,638
General Provision Store	390.18	169.80	46,552	20,793
Fertilizer and Pesticide Shop	547.99	189.92	66,800	22,842
Allopathic Treatment and Clinic	91.55	68.29	40,625	78,956
Restaurant	403.34	311.36	47,558	20,782
Weekly Market	505.20	465.78	60,537	54,863
Pharmacy	784.12	366.56	92,960	45,675

**Table 2**  
**The Nagpur Metropolitan Region: Service Area and**  
**Service Population of Services: 1969-79**

	Service Area (in sq. kilometers)	Service Area (in sq. kilometers)	Service Population	Service Population
Services	1969	1979	1969	1979
Primary School	7.14	2.15	280	360
High School	37.65	45.89	3,455	5,624
Junior College	0	84.51	0	9,786
College	0	89.30	0	11,297
Vaccination	36.26	43.74	3,098	5,103
Allopathic Treatment	46.41	50.16	3,883	6,156
Family Planning	45.58	47.06	3,504	5,763
To buy postage (BPO)	29.58	39.91	2,697	4,761
Money orders (BPO)	29.58	39.91	2,697	4,761
Postal Savings (BPO)	29.58	39.91	2,697	4,761
Telegrams (SPO)	37.19	47.86	3,917	7,350
Postal orders (SPO)	37.19	47.86	3,917	7,350
Telephone calls (SPO)	37.19	47.86	3,917	7,350
Radio license (SPO)	37.19	47.86	3,917	7,350
Primary credit society	30.22	11.86	2,780	1,750
Cooperative Bank	53.97	83.57	9,088	10,515
Nationalized Bank	53.97	57.78	7,948	9,088
Bus Service	28.07	46.18	2,493	5,740
Seed distribution centre	53.97	70.70	9,088	9,900
Fertilizer distribution centre	53.97	70.70	9,088	9,900
Pesticide distribution centre	53.97	70.70	9,088	9,900
Veterinary dispensary	37.21	53.90	3,451	6,687
Clinics	41.33	46.96	3,490	5,629
Goods transport	24.60	46.87	2,784	6,722
Seed shop	33.95	52.40	5,615	7,968
Fertilizer shop	33.95	52.40	5,615	7,968
Pesticide shop	33.95	52.40	5,615	7,968
Agricultural implement shop	35.07	43.31	2,055	5,124
Agricultural implement repair shop	35.07	43.31	2,055	5,124
Weekly market	56.56	86.17	9,488	11,120
Wholesale market agent	62.68	91.16	9,510	11,800
<i>Kirana</i> store	7.12	10.88	563	850
Cloth and garment store	40.24	48.48	3,692	5,942
Tea and coffee shop	9.84	13.20	780	1,032
General provision store	51.60	57.94	4,316	7,110
Hardware and electricals shop	51.60	57.94	4,316	7,110
Chemist and druggist	51.60	57.94	4,316	7,110
Restaurant	28.08	46.18	2,493	5,740
Cinema theater	79.25	94.48	9,523	11,452
Other shop	23.67	29.68	2,127	3,396
Rice mill	14.14	29.05	1,515	3,189
Oil mill	19.08	32.06	1,685	3,673
Flour mill	19.08	32.06	1,685	3,673
Fodder cutter	19.08	32.06	1,685	3,673

\* Rounded to the nearest ten.

### Spatial Intervention and Stages of Regional Development

On the basis of the available evidence, it can be suggested that the difference in the role of the government sector are a consequence of the stages of development at which the two regions find themselves. Broadly speaking, Nagpur region has existed as an urban/industrial region since the beginning of this century; where the spatial framework within which services, agro-industries and rural cottage industries have tended to emerge, as a spontaneous response by the private sector to the policy declarations of the government, has existed for the last eighty odd years (20). This, for example, becomes clear from the figures of index of service provision in Table 3; which are impressively high for Nagpur region. Miryalguda region, on the other hand, is a rural/agricultural region which has changed from a drought prone area to an irrigated tract in the late sixties where such spatial framework itself was in the process of being established; in which the role of the government sector was observed to be the more dominating (19).

### Conclusions

It is noted that the "gaps" in the urban segment of the settlement system tend to make the system only partly effective in facilitating the development of the urban and rural sectors of the economy. But one of the main reasons for these urban based models to continue to be partly effective, particularly in the rural sector, is the insistence (of the current research workers in this field) to treat urban and rural (centres, populations and regions) separately. It is one thing to do so in the census abstracts (in a demographic sense) in order to help understand their distinct characteristics; but it is quite another, and incorrect, thing to do when describing their spatial and/or functional characteristics. In almost all analyses of settlement systems, therefore, only the urban segments have received (disproportionate) attention; and not only have the rural segments not been included but in some instances these have been wished away.

Table 3  
Service Provision in Miryalguda and  
Nagpur Regions: Index of Service Provision

	Miryalguda Region		Nagpur Region	
	1968	1978	1969	1979
For region as a whole	1.79	3.84	60.29	97.25
For government sector services	1.05	2.14	21.00	27.97
For private sector services	0.71	1.69	39.29	69.2

Note : This is the index of services provided in 1 square kilometer of area

Source : Wanmali (19, 20)

Whatever the real, or assumed, difficulties in undertaking such an "integrated" research, this situation needs to be remedied soon. An example of how during the last twenty-five years the research on urban-rural relationships in India is going in circles is reflected in the emergence of the same issues and questions at a meeting of experts who were entrusted with the task of defining a policy of urbanization in the country (3). As was noted elsewhere, one of the reasons for the inability to break out of this circle is the reluctance of the development planners to explore new policy options (19, 20).

It is not difficult to see, for example, that the urban centres are *located in rural areas* besides being "connected" to other urban centres; and that what are described as tentacles of an urban system in a disorganized rural sector can also be described as apexes of a spatially, and temporarily, organized rural settlement system (18).

In the two case studies it was observed that spatial intervention took the form of establishing new services and agro-processing units in the villages of a rural region: this was achieved by taking into cognizance the demographic, functional and spatial characteristics of the rural segment of the settlement system; and this entire development was viewed in the context of its linkages with other sectors of the regional economy such as irrigation, transport, industrial development as well as agriculture. Thus, it can be said that such exercise of spatial intervention could be undertaken in a region to improve the articulation of its settlement system as well as the overall access to its services

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