



Urban economic growth, infrastructure and poverty in India: lessons from Visakhapatnam

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SUMMARY: *This paper describes the rapid economic growth in the city of Visakhapatnam which is now one of India's largest ports and an important industrial town and seaside resort/retirement centre. It highlights how the city's further growth is constrained by inadequate investment in infrastructure - especially for water and electricity - and discusses the political and institutional reasons for this. It then presents the findings of participatory research on poverty, and the many dimensions of poverty which are emphasized by urban poor groups, including inadequate incomes, lack of assets ("no shelter, no property, no gold"), lack of support (especially for widows, deserted women and the handicapped), illness and debt. It discusses the direct and indirect impacts on poverty of a DFID slum improvement project, showing which improvements low-income groups particularly appreciated. This demonstrated the importance of infrastructure and service provision to poverty reduction within a wider recognition that this is but one important aspect.*

I. INTRODUCTION

THIS PAPER EXPLORES the relationship between urban economic growth, the provision of urban infrastructure and poverty reduction.⁽¹⁾ The central argument underscores the importance of the delivery of infrastructure in facilitating both urban economic activity and growth but also in addressing the "quality of life" dimensions of urban poverty. In a nutshell, however unfashionable and boring it might seem, infrastructure matters! It is an important lever that is available and capable of being delivered by local government⁽²⁾ but one which the Indian state at all levels (union, state and municipality) is manifestly failing to deliver.

Section II of this paper provides a general background to Visakhapatnam and Section III considers the process of urban economic growth and the problems related to infrastructure. Section IV considers perceptions of urban poverty and Section V is concerned with a donor funded slum improvement project as an example of the provision of infrastructure for poor households. Finally, the conclusion is a discussion on the importance of and constraints in the delivery of urban infrastructure in terms of urban economic growth and poverty reduction.

II. BACKGROUND: A BOOM TOWN IN INDIA

VISAKHAPATNAM⁽³⁾ (OR VISAG as it sometimes known) is located on India's eastern seaboard in the state of Andhra Pradesh, approximately equidistant from Calcutta to the North and Chennai (previously Madras) to the South. Andhra Pradesh is an important state in South India with, by Indian standards, relatively good social indicators. The area of Visag was originally a small fishing village which began to gain prominence during the British Raj as an alternative port to Bhimunipatnam on the coast north of Madras. Table 1 provides population data.

Year	Population
1901	40,892
1911	43,413
1921	44,711
1931	57,303
1941	70,243
1951	108,042
1961	211,190
1971	363,467
1981	603,630
1991	1,051,918

SOURCES: Drawn from Indian Census data.

As in many urban centres in India, the rate of growth was slow until the 1970s. However, since then, the growth rate has been spectacular; indeed, Visag has been the fastest growing urban area in India since 1971. Its population has increased from 363,467 in 1971 to 603,630 in 1981 and to 1,051,918 in 1991, representing average urban growth rates of 6.6 per cent between 1971 and 1981, and 7.4 per cent between 1981 and 1991. This growth has been partly associated with the inclusion of areas into the municipal boundary since 1965. The inner-city area has grown from a population of 353,000 in 1971 to 593,000 in 1981 and to 823,000 in 1991, average annual growth rates of 6.7 per cent and 3.9 per cent, respectively. This is in contrast to the overall urban growth rate in India which slowed down from 4.6 per cent in the 1970s to 3.7 per cent in the 1980s.⁽⁴⁾

Visakhapatnam is a port and major industrial centre but also a smart residential and seaside resort and retirement area. In UK terms, it is a very unusual combination which might be characterized as the mix of an industrial location such as Middlesbrough with a seaside/retirement centre such as Brighton. The key development in Visag was the development of its well-protected natural harbour into a port, which was planned by the British in 1858 and on which proposal a report was published in 1877. In 1922, the Bengal Nagpur railway revived Colonel Cartwright Reid's proposal to construct a harbour at the mouth of the Meghadrigedda. Construction was started in 1927 and the port was opened in 1933. On the eve of independence in 1947, the Scindia shipyard, which was based in Visag, was taken over by the government of India and renamed the Hindustan shipyards. Similarly, the Caltex oil refinery was

1. This paper is based on two separate but related pieces of research. The main source is one of nine city case studies prepared as part of a research programme on *Urban Governance, Partnerships and Poverty*, funded by the UK Department for International Development's ESCOR programme which was written by Sashi Kumar (Thinksoft Consultants) in 1998 and 1999. This involved research teams in each of these cities and a coalition of UK-based research groups from the University of Birmingham, the International Institute for Environment and Development (IIED), the University of Wales, Cardiff, and the London School of Economics. Summaries of other city case studies also feature in this edition of *Environment and Urbanization*. The full version of this study and other city case studies and also of theme papers may be obtained from the Publications Office, School of Public Policy, University of Birmingham, Birmingham B15 2TT, UK; tel: (44) 121 414 5020, fax: (44) 121 414 4969 or e-mail to: u.grant@bham.ac.uk. City case studies cost UK£10 each (including postage) but are free to NGOs and teaching institutions in non-OECD countries. This paper also draws upon work undertaken as part of the "Impact Assessment Study of Indian Slum Improvement Projects", carried out in 1996/97 by Sashi Kumar, Lalita and Vithal Rajan of Thinksoft Consultants, and Gita Dewan Verma from New Delhi, for DFID, India. Neither DFID India nor ESCOR are responsible for the comments made here.

2. Amis, Philip (1999), *Final Report on Impact Assessment Study of Slum Improvement Projects*, DFID

3. The spelling of the city can vary.

4. These all-India figures include substantial boundary changes in most Indian cities.

5. What today is Bangladesh was part of India under British rule; it became East Pakistan after partition in 1947 and finally achieved independence in 1971.

nationalized and became the Hindustan Petroleum Corporation. The city has benefited from a succession of large public sector investments in the area. In this context, it is worth noting that until its recent liberalization in the 1990s, the Indian economy contained a substantial public sector. In Visag, this included Coromandel fertilizers, Bharat Heavy Plate and Vessels, and Hindustan Zinc. These were all attracted to Visag primarily because of its port.

Visag's strategic location on India's eastern seaboard enabled the nascent Indian navy to convert its repair facility established during World War II into a proper navy base. This was given a major fillip during the 1971 Indo-Pakistan war which led to the establishment of Bangladesh.⁽⁶⁾ For security reasons – and presumably because of its distance from Pakistan – the Navy upgraded the base to become the headquarters of the Eastern Naval Command concerned with the security of India's entire eastern seaboard. These naval dockyards are the largest ship repair facility in South and South-East Asia, employing 8,000 people.

The port handles a wide range of bulk, break-bulk, container and other general cargo and this has attracted a lot of heavy industry. Recently, India's first port-based steel industry was set up for the import of raw materials and the export of finished products. In addition, a new export processing zone has been established in an attempt to attract both local and inward new investment. It is too early to judge the success of this initiative.

During 1996-97, Visakhapatnam Port Trust handled 27.8 million metric tonnes compared to the 27.4 million tonnes handled by Mumbai (Bombay) Port Trust. This was the first time Visag had surpassed Mumbai, making it India's largest port in terms of tonnage, which has increased by approximately 10 per cent per annum over the last ten years. In terms of the type of cargo handled, petroleum products were the most important followed by iron ore, coking coal and thermal coal.

This growth has been associated with rapid industrial growth, and registered industrial employment has increased from 36,342 workers in 1984-85 to 53,534 in 1993-94. An alternative measurement is the number of registered workers as shown in the census and this has increased from 97,910 in 1971 to 149,292 in 1981 and to 215,700 in 1991.

There has been a concomitant real estate boom in Visakhapatnam. This has been fuelled partly – as in most fast-growing cities – by its potential as a lucrative investment but the city also is perceived as a desirable place for retirement, particularly by former public sector workers. Professionals and middle-class people are relocating from the nearby districts of Krishna, Guntur, and East and West Godvadi, bringing their businesses with them; and they, in particular, have invested in real estate, construction, financial services and hotels. This is an illustration of confidence in the local economy which has resulted in a mini-real estate boom and in land prices increasing ten-fold in the last decade. These now stand at Rps 30,000 per square yard, amongst the highest in the state.

This boom town image has not been restricted only to the higher levels of the economy. Industrial worker wages have risen over the last decade and have generally kept ahead of inflation. Furthermore, some industrial sector workers such as those employed in petrochemicals, transportation and basic metals are earning well over Rs 3,000 per month on average which is better than most lower-level white collar workers in Andhra Pradesh.

In terms of poverty, the most significant change is in relation to

unskilled casual workers. It has been reported that the latter's wages have nearly doubled in the last five years to around Rs 50-55 a day for men and Rs 35-40 for women. This increase has occurred despite rapid urban growth and the presence during the summer months of an estimated 30,000 to 40,000 seasonal labourers who look for work in the urban area during this slack period when there is little agricultural activity.

The increase in daily wage has been associated with the boom in construction work. Its importance lies in the fact that it is the casual daily wage rate that underpins all other wages in the local labour market. It is also a very clear indicator of the local labour market as, often, employment is given on a daily basis by labour contractors recruiting workers from a crowd of hopeful would-be workers.

It is not clear precisely what role urban governance has had in this process. Like other Indian cities, Visakhapatnam effectively has two authorities: a municipality which is concerned with providing services and collecting revenues, and an urban development authority responsible for capital development projects. Overall, they have, by and large, acted in the interests of industrial concerns in terms of alienating land for industrial use, providing fast clearance for projects and in promoting partnerships with local business to provide ancillary services. However, this has not always been viewed neutrally and there have been examples in the local media of criticism of the linkages between local politicians and business, especially concerning land deals.

III. INFRASTRUCTURE CONSTRAINTS UPON URBAN ECONOMIC GROWTH

HOWEVER, DESPITE THIS dramatic urban economic growth, there are major problems ahead. Indeed, this economic growth and success may itself actually exacerbate some of the infrastructure problems by creating additional demand. The most visible sign of this is the number of ships anchored offshore waiting to dock. In 1996, the figure stood at around 15 to 20 waiting every day⁽⁶⁾ with waiting times reported to be between seven and 23 days; this entails heavy charges for the relevant concerns. There are plans to expand and deepen the port, including plans for a deep-draft multipurpose berth outside the main harbour, capable of taking ships of up to 60,000 DWT initially but eventually rising to 100,000 DWT; the estimated cost is Rs 37 crores (or UK£11.5 million).

Another issue concerns the trucks that carry LPG (Liquid Petroleum Gas) from the docks to the hinterland. There is a lack of basic parking facilities which results in approximately 400 to 500 road tankers having to park along the side of highways for up to 20 kilometres away from the loading berths.

Another major constraint is the provision of power – an India-wide problem. Thus, the Eighth Plan (1992-98) envisaged eight new power plants with a capacity of 30,000 megawatts. To date, only 15,000 megawatts have been provided, with Andhra Pradesh only able to provide 187 megawatts; Visag is currently waiting for a new Hinduja thermal power unit to come on-stream. There are major problems in India in providing the necessary framework to encourage private (foreign) investment in the power sector.⁽⁷⁾

The final area of infrastructure weakness is water supply. The whole city faces an acute water shortage with no more than 50 per cent of house-

6. Personal observations from visits to Visag during the impact assessment study in 1996.

7. The most visible example is the Diabol plant in Maharashtra where there has been a protracted dispute with the American corporation ENRRON.

holds having a municipal connection. The water is supplied twice a day: an hour and a half in the morning and one hour in the evening. In addition, underground water is being "mined" by industry and residential developments alike; in the industrial area, the water table has fallen to 100 metres.

These shortages have been exacerbated particularly by the construction boom in high-rise apartment buildings in desirable and prime locations (often of a "sea view" type) for middle-class and/or retirement accommodation. Ground water levels have started falling: in the early 1990s water levels were at an average of three metres whilst now they are reported to be around 30 metres. Furthermore, since the late 1980s, residents have reported the infiltration of saline water into the aquifers. These apartment blocks receive water on what is called a semi-bulk basis and it is estimated that these connections account for 40 per cent of the domestic consumption. There are clearly infrastructure problems caused by the influx and growth of middle-class areas. It is clear that the water supply problems will not be solved until a major initiative – the Yeleru canal water scheme, which will deliver 15 million gallons a day – is constructed. However, this project has not yet been cleared at the state level.

The dramatic increase in the number of vehicles in the urban area has also been putting pressure on infrastructure. The total number of motor vehicles (cars, motorcycles and scooters) has increased dramatically from 14,078 registered in 1980-81 to 34,886 in 1984-85 to 148,885 in 1993-94, an annual growth rate of 53 per cent. This, of course, is not only a function of middle-class growth but is also due to the dramatic changes taking place in India as a result of liberalization in the 1990s. This rapid growth is, of course, an important factor in the dramatic increases in air pollution in Indian cities.

In summary, therefore, the general argument among officials and politicians is that Visakhapatnam's infrastructure development has long been neglected and that this has choked the process of rapid industrialization to which the city was witness in the 1980s.

Visakhapatnam is not a politically vibrant city as compared to Hyderabad and Vijayawada in Andhra Pradesh. There are three main political parties, namely, Congress, Telegu Desam and the BJP. Congress is the strongest party in the city, particularly in the slums where an estimated 80 per cent of the vote goes to Congress. It has won the elections held for the legislative assembly and for the parliamentary constituency; the municipal council has 50 wards, of which Congress managed to win 35 in the last election. The voter turnout is usually around 55-60 per cent, although the middle-classes are less interested, with only approximately 20 per cent voting. The middle-classes generally patronize politicians and have little interaction with them. For the poor, elections are important as a source of patronage. Generally, the elections are considered fair with only a small amount of rigging.

A mayor's success in Visakhapatnam is dependent upon how well he/she is able to balance the interests of the slum dwellers, who are potential "vote banks", with his/her obligations towards the private business community who sponsor and forward his/her candidature. Caste is important here as the business community is mainly made of upper-caste groups – *reddys* and *kammas* – who are traditional land-holding castes in Andhra Pradesh, and the mayor's seat is reserved for a candidate from the backward castes. Generally, upper-caste business men patronize backward castes. However, the *kammas* who, in the state, generally

support Telugu Desam have switched locally and here support Congress. In addition, they support the present mayor who is a *velama* (a backward caste) because they felt that he is someone who is sympathetic to their business interests. The mayor of course denies this. Two observations are significant here; first, the way the business community switches sides in order to be linked with the group in power and second, the importance of backward castes and vote banks in electoral terms.

However, in relation to local economic development, the most significant observation is that Visag is Congress controlled – including the MP – while the state and the union are controlled by different parties. This significantly affects its ability to lobby for investment and for the infrastructure improvements that are so clearly needed. This confirms familiar arguments about the importance of effective decentralization in enabling local economic development.⁽⁸⁾ The problem here is that all the important levers in terms of infrastructure are not at the local level and are dependent upon national and state level patronage politics. There are some similarities with the case of Mombasa in Kenya.⁽⁹⁾

IV. POVERTY TRENDS AND PERCEPTIONS

IN THIS SECTION, we consider the nature of poverty in Visag, and this will be followed by a discussion of a slum improvement project supported by the UK government’s aid agency, the Department for International Development (DFID). In particular, it will be interesting to see to what extent it is possible to identify any “trickle down” from the above processes. Poverty line data in India is contested and it can not be broken down for specific urban centres.

However, the most reliable data⁽¹⁰⁾ show a decline in urban poverty in the state of Andhra Pradesh, from 43.5 per cent in 1978 to 27.9 per cent in 1991, followed by an increase to 33.1 per cent in 1992. Unfortunately, this can provide little more than a context within which to locate the specific experience of Visakhapatnam.

Table 2: Percentage of Population Below the Poverty Line in Urban Andhra Pradesh	
Year	Headcount (%)
1978	43.5
1983	35.6
1987	38.6
1988	40.0
1990	32.0
1991	27.9
1992	33.1

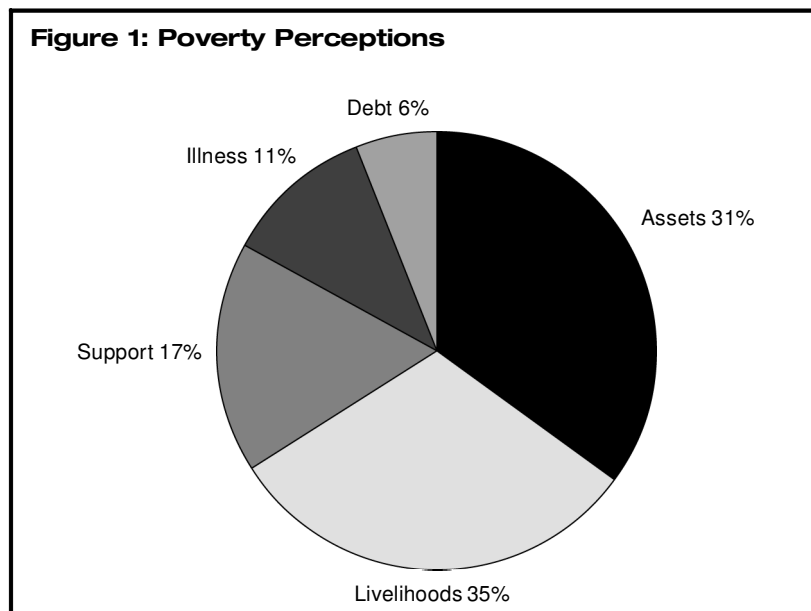
Participatory research has highlighted the dimensions of poverty in Visag, with the aim of elucidating the poor’s own definition of poverty. This was achieved through a combination of focus group and in-depth interviews, and the slums were selected so as to be representative. The

8. See Vidler, E (1999), *City Economic Growth*, theme paper No 1. The University of Birmingham.

9. See the paper on Mombasa by Rakodi, Gatabaki-Kamau and Devas in this issue.

10. The table below is adapted from the database developed by the World Bank by Ozler B, G Datt and M Ravillion (1996), *A Database on Poverty and Growth in India*. This was a research project designed to clean up and provide a uniform database from the Indian data. It is, therefore, as far as possible free of the usual "politicization" of this dataset. Unfortunately, it only goes up to 1991/1992.

research was carried out by Thinksoft Consultants with a group of eight researchers in two teams, primarily split by gender. This was very detailed work in four 'slums' over a six week period. Figure 1 is a summary of the documentary analysis of all the statements that the poor gave in relation to the definitions and characteristics of poverty.



It was possible to sort responses into five main clusters as shown in Figure 1. The most common responses were statements associated with livelihood or occupation. A typical statement would be "...those without work job [are poor] as they live in uncertainty." However, an individual's position within the labour market was also frequently commented upon, in particular regarding the hierarchy of regular workers, contract workers and casual workers.⁽¹¹⁾ The next type of statement was that associated with the ownership of assets. In this context, a typical statement would be along the lines of "...poverty is related to lack of shelter or property." Alternatively, the poor are "...those with no shelter, no property, no gold."

The most common statements related assets and livelihoods to food, for example, "...without work we starve" or, the extremely poor "...are those who have to work every day to feed themselves" or, "...not enough food even after a whole day's work." This kind of statement was so common in certain groups that we might even suggest that it is as close as possible to a definition of poverty by the poor themselves. This was repeated in parallel studies in the cities of Indore, Vijayawada and Calcutta.⁽¹²⁾ The power of the statement lies in the fact that it identifies the link between employment and assets (or lack of) but also, critically, the fact that for many poor, cash flow is the major problem.

The previous two dimensions are well-accepted in the literature on urban poverty; the support or dependency dimension has been less well-explored. Yet, the next most common statement concerned questions of support - or the lack of it. For example, poverty is "...not having anybody to support you" or being "...unsupported, especially when ill." Key

11. This is consistent with much of the literature on Indian urban poverty - see Amis, P (1997) "Indian urban poverty: What are the levers for its effective alleviation?" *IDS Bulletin* Vol 28, No 1, April.

12. See reference 2 and Kamal Kar (1997) *Participatory Impact Assessment Calcutta Slum Improvement Project Main Findings Report*, DFID

vulnerable groups included widows and deserted women, the handicapped and the physically disabled.

The next category effectively defines poverty in terms of illness. The link between illness increasing indebtedness, and subsequent increases in poverty through the need for private medicine was very clearly confirmed.⁽¹³⁾ Illness is the strongest "shock" that can affect low-income households and its impact is greatly amplified in that it forces individuals to withdraw from the labour market, and indebtedness is increased through the need for medicine. Often, this is made worse by the fact that many of the illnesses are associated with TB and industrial accidents which, unfortunately, often require regular and sustained flows of money.

Box 1 illustrates the situation where individuals' ill-health and general health status prevents them from consistently participating in the labour market.

13. This is very clear in Pryer, J (1989), "When breadwinners fall ill: preliminary findings from a case study in Bangladesh" in *IDS Bulletin* Vol 20, No 4 (also in Pryer, J "The impact of adult ill-health on household income and nutrition in Khulna, Bangladesh", *Environment and Urbanization* Vol 5 No 2, pages 35-49); and in Amis, P (1994), "Indian urban poverty: labour markets, gender and shocks" in *Journal of International Development* Vol 6, No 5.

Box 1: Resting or Lazy? The Health Limits to How Much the Poor Can Work

A very important finding was the observation that there seemed to be fit, young individuals who consistently were unable to undertake daily wage labour. At first appearance, it seemed that they were lazy – this was the research team's first reaction – however, after further investigation, this was found not to be the case. The conclusion was that these individuals were "resting" rather than idle; they were recovering from the very hard physical exertion their jobs often required.

This finding was confirmed by recent anthropological work in Gujrat^(a) and Visag.^(b) *Pedda coolies* from the bazaar, who may be paid Rs. 50-70 a day with an average of around Rs. 55 (March 1997 rates) are only able to work three or four days a week. In a month, they can only work about 15-16 days; it is impossible to work 30 days. These are individuals who work on their own and who can not lighten their loads by informally sharing the work around. Paradoxically, those who work in groups – which makes for lighter work but less well paid at around Rs. 35-40 a day – may be able to work for the majority of the month.

It is worth emphasizing two factors: first, it is only in a relatively buoyant economy (with a tight labour market) such as in Visag that this issue is ever likely to present itself. In many places, the option of working 30 days a month is simply not on offer. Second, these individuals are young and able bodied. The problem is not one of direct ill-health but of overall nutritional level, poor diet, physical fitness and the severity of the physical labour. The policy implications are enormous, namely, that the Indian labour force is physically not fit enough to participate in economic growth. This implies an emphasis on the importance of health provision for workers – an extension of the familiar ill-health/asset loss/debt argument.

SOURCE: Impact Assessment Study of Slum Improvement Projects in India; 1996, Working Paper (unpublished).

(a) This observation has also been made about informal migrant labour who have to take time off to recuperate because of the "murderous work pace"; see Bremen, J (1996), *Footloose Labour*, Cambridge University Press, page 70.

(b) Personal communication, Rajesh Patnaik, *Urban Poor, Social Policy and International Assistance: Dimensions of Planned Interventions in the Slums of Visakhapatnam*, PhD thesis.

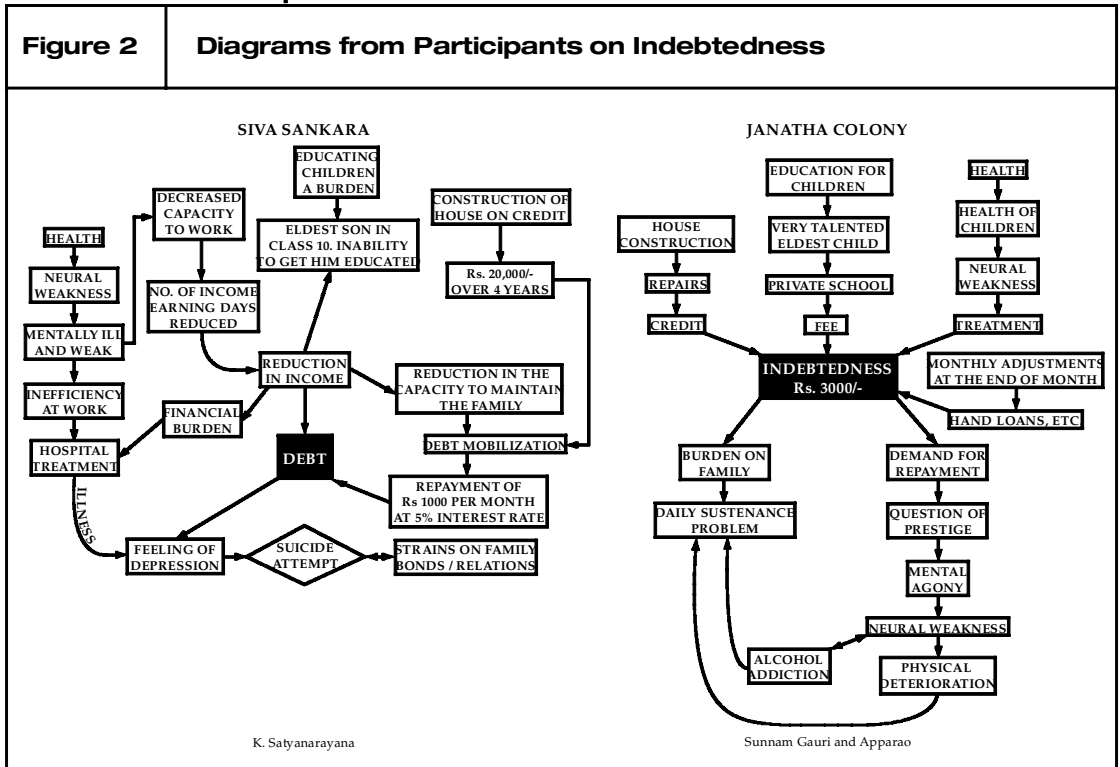
The last category of statements defines poverty in terms of indebtedness. Going into debt is an acknowledged household "survival strategy". The relative low scoring on debt is somewhat surprising given the dominant position it occupies in the literature on Indian urban poverty. The sources of debt are a more important indicator than the amount⁽¹⁴⁾ and it was possible to identify three different types. These were:

- credit from family and friends with no or low interest; this was the easiest to manage although it put the recipient under "psychological pressure";
- money from credit and savings associations; and
- the least favoured option, the money lenders, who charged high levels of interest and "fines" for late payment.

14. High income households in North America and Europe are often highly indebted but are able to service those debts.

15. In work for the impact assessment study in other Indian cities, alcohol became a major issue. Indeed, in the final report, it became a sixth category of poverty - see reference 2.

The two diagrams in Figure 2 were drawn by respondents and illustrate the very powerful links between expenditure on health, shelter and education, and increased indebtedness. As mentioned earlier, the link between ill-health and debt is well-established in the literature; the importance of expenditure on shelter and education as a cause of indebtedness is perhaps a more interesting finding. The subsequent impact of debt upon family relations and attempts to "escape" the burden through suicide and alcoholism⁽¹⁵⁾ are also clearly illustrated.



16. This section is based almost entirely upon the impact assessment study (see reference 1).

V. POSITIVE IMPACT OF INFRASTRUCTURE: DFID'S SLUM IMPROVEMENT PROJECT⁽¹⁶⁾

FROM 1988 UNTIL 1995, DFID (previously known as the ODA - Overseas Development Administration) provided the capital (UK£9 million/Rs 29 crores) for a slum improvement project in the city which was implemented by the municipal corporation. The project involved:

- improvements in physical infrastructure (water, drains, communal latrines, paved roads and community halls in 170 slums (estimated population of around 200,000);
- primary health care (improved nutrition, access to and availability of health care and staff, improved health education and family planning); and
- education and community development (craft-training centres, pre-schools (balwadis), adult literacy centres and small business loans).

The infrastructure components of the project which helped improve the overall environment were greatly appreciated by the inhabitants (by

reducing flooding, making roads passable and reducing the burden of collecting water), in particular by women. In addition, there was some evidence that these improvements, through effectively increasing the length of the day (by street-lighting) and increasing the use of outside space, had resulted in some increases in economic activity.

These findings were very strongly supported by the survey data on 600 households:

- 83 per cent of respondents noted that the scheme had improved the image of the slum;
- 88 per cent reported improved access for vehicles and pedestrians;
- 48 per cent noted a reduction in flooding and 55 per cent a reduction in water stagnation;
- 44 per cent reported an increased use of public space for social activity, 47 per cent for household activities and 13 per cent for economic activities;
- with regard to water, 62 per cent of households reported a decline in the burden for women while 68 per cent reported a time saving.

It was not possible to measure directly the impact of this project on an income- or consumption-based definition of poverty. However, a hierarchical model of poverty was developed to measure the project's impact, based on the concepts of survival, security and quality of life. From the study, a judgement was made about the impact of individual components on various dimensions of poverty. Table 3 shows this for selected components.

What is clear from Table 3 is that the project's major impact came from the infrastructure component improving the "quality of life" dimensions of poverty. Given that the infrastructure improvements had, in some cases, taken place more than five years ago, these are very strong findings. An important additional finding from a special follow-up survey⁽¹⁷⁾ was that the project had not resulted in increased residential turnover. Thus, the original "target group" were the main beneficiaries of the project although this is often not the case with such projects elsewhere.

The other social and community development components were less

17. No follow-up survey was carried out in Visag but some were carried out in Indore and Vijayawada.

Table 3:	The Impact of Different Project Components on Different Dimensions on Poverty (The greater number of stars *, the greater the impact)						
Dimension of Poverty	Roads	Drains	Water	Street lights	Latrines	Pre-schools ^(a)	Health
Survival							
Low-income		*	**				
Chronic/critical ill-health			**				**
No income substitution/PDS							
Security							
Irregular income	*					*	
Lack of assets	**	*		**			
Lack of empowerment				*		**	
Quality of life							
Poor public health		*	**		*		*
Environmental hazards	**	***	***				
Discomfort/drudgery	***	**	**	***	**	**	

a. Balwadi

18. Dreze, J and A Sen (1996), *India: Economic Development and Social Opportunity*, Clarendon Press, Oxford.

well implemented and had a tendency, sometimes, to be taken over by one group at the expense of others. Of the social components, the provision of balwadis (pre-school play centres for young children) was the most widely appreciated. The key factor in their success was the staff's motivation which, itself, is a function of their response to community pressure. This confirms the importance of accountability in the delivery of education in India, a factor which has been noted elsewhere.⁽¹⁸⁾

The survey work produced other interesting insights. For example, fully 20 per cent of the households interviewed reported that their economic circumstances had improved in relation to incomes and employment. This, given most peoples' natural pessimism and reluctance to answer positively, seems to be a high figure. The other area of interest was in relation to household assets, where it was possible to compare the survey data with a project baseline from 1988. Table 4 compares the ownership of selected consumer durables between 1988 and 1997. The

Slum	TV (1988)	TV (1997)	Fans (1988)	Fans (1997)
Bhupesh Nagar	1%	17%	1%	29%
Indira Nagar	3%	51%	20%	61%
Janata Colony	29%	53%	n.a.	57%
Amar Nagar	0%	19%	0%	36%

poor gain access to consumer durables – notably televisions and fans – through a system of informal hire purchase, which goods are then often run on illegal electricity connections. The extent to which such goods are now available to the poor, and their significance, is a little understood process.

Table 4 shows the dramatic increase in consumer durable ownership since 1988. This is not, of course, directly related to DFID's project but is, however, a reflection of significant changes at the bottom in India that may reflect changes⁽¹⁹⁾ that have come about since liberalization, improvements in programming and perhaps the development of an informal hire purchase industry. It is possible that the importance of this hire purchase credit system may represent a "reinvention" of the traditional debt system.

In summary, the project's impact was very significant in terms of improvements in the "quality of life" and/or environmental dimensions of urban poverty. The project has been much less successful in addressing the problems of survival and security, for example, livelihoods or income, ill-health and debt which were also identified as important dimensions. Nevertheless, the study provides very strong support for the provision of basic infrastructure to the poorest in India's cities. This may be a limited objective, with limited impact but there is no question that it is appreciated and can be successfully delivered.

VI. CONCLUSIONS

THE CONCLUSIONS FROM this case study for Indian urban economic development and poverty reduction are alarming. Visag is an example of

19. There are cultural dimensions to this; see Naipaul, V (1990), *India: A Million Mutinies Now*, Minerva, India. (Personal communication Rakesh Mohan, 1998).

rapid urban economic growth, in both its industrial and real estate sectors, which has resulted in a buoyant labour market and, most notably, an increase in casual daily wage rates. This has all happened alongside rapid urban population growth. However, this very success has exposed the limitations in the effects of economic growth and, indeed, the intractability of urban poverty in India.

First, Visag's success is already being constrained by the lack of investment in urban infrastructure. This is most visibly illustrated by the sorry number of ships waiting to dock. The provision of large and small urban infrastructure - including its financing - remains one of the most intractable problems in India today.⁽²⁰⁾ This case study shows that even in the boom towns it remains a problem, and possibly an even greater one as any growth rapidly pushes up against infrastructure constraints.

The second concern is workers' physical inability to fully participate in the buoyant labour market due to their own weakness and ill-health. The worrying conclusion is that because of the low levels of human capital, urban economic growth will not be sufficient despite increasing wage levels. This again emphasizes the importance of human capital in economic development in India.

On the positive side, the success of the DFID interventions, especially in improving the "quality of life" for low-income households, does show what can be done through capital spending on infrastructure. However, it is important to understand that this addresses only one of the many dimensions of poverty.

In conclusion, while the problems of urban poverty in India are enormous, it is perhaps relevant to note that some of the solutions are relatively clear. This is particularly the case in terms of the provision of physical infrastructure and in the area of human capital. The task is to implement; the problem is to overcome the political and economic constraints.

20. Mulkh, Raj (1993), "Urbanisation, infrastructure and besieged growth potential" in *Third World Planning Review* Vol 15, No 2.