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**Poverty lines and lives of the poor**

**Underestimation of urban poverty - the case of India**

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**Meera Bapat**

**February 2009**

This is one of a series of working papers exploring the appropriateness of definitions and measurements of poverty in relation to urban poverty. It was prepared with financial support from the Swedish International Development Cooperation Agency (Sida)

## ABOUT THE AUTHOR

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## **ABSTRACT**

This paper describes the development of poverty lines in India, from the 19th century to the present, and assesses their limitations as an indication of poverty. It demonstrates that use of the official poverty line results in considerable underestimation of the extent of urban poverty, and oversimplifies the nature of poverty by disregarding or disguising the reality of the lived experiences of poor people. It then considers the relevance and accuracy of the official poverty line as applied in Pune, a city with around 3 million inhabitants. This highlights the very large gap between the 2 per cent of households designated as “poor” by application of the official poverty line in Pune and the 40 per cent “living in poor conditions”. The paper also examines the wider nature of poverty and how this has changed over time, using data from a longitudinal study of slum settlements in Pune from 1976 to 2003. Despite Pune’s rapid economic growth, most of the slum households surveyed saw little or no increase in their real income or in improved job opportunities – and little possibility of getting accommodation outside the slums. The paper ends with a discussion on how to achieve a better understanding and measurement of the numerous and interconnected aspects of urban poverty.

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**Underestimation of urban poverty - the case of India**  
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**SUMMARY**

**Poverty lines in India**

A large proportion of India's urban and rural population lacks the income or assets to meet basic needs; in most urban areas, this includes a large proportion living in poverty in slums or informal settlements with very inadequate provision for basic services. But most of those "living in poverty" are not considered poor by official definitions. Poverty in India is defined and measured by specifying a poverty line based on a particular level of per capita consumption or income and assessing what proportion of the population falls below this line. The basis for defining the income needed to avoid poverty is that which provides each person with a specified minimum number of calories per day.

There has been much debate over the years on how to set this poverty line. Indeed, the first attempt to define a poverty line for India was made in 1876, and a second poverty line was included in a note prepared for subcommittees of the National Planning Committee in 1938. The nationalist discourse that sought India's independence from the UK was rooted in the belief that colonial rule had led to large increases in the level of poverty – and the commitment to reduce poverty has often been stated as a key goal by the Government of India.

The first poverty-line definition in post-independence India was established in 1962 by a group of economists. This poverty line was based on the price of a minimum required basket of foodstuffs, with a small additional allowance for non-food needs (such as clothing, shelter and fuel). The group recommended that urban poverty lines be set at 1.25 times that of rural areas, to allow for higher prices for commodities. No allowance was made for expenditures on health care or education as it was expected that these services would be provided free by the state. Since that time, there has been much debate on what mix of foodstuffs should constitute the minimum food basket (with obvious implications for the income needed for food), how to allow for non-food needs, and how to reflect differences in costs between states and between rural and urban areas.

**Shortcomings in the official poverty line**

The Planning Commission, Government of India claims that the proportions of the rural and urban populations that are poor have declined steadily over the years. The extent of poverty, however, is much influenced by how poverty is defined. The all-India official poverty line for 2004/05 is Rs356.30 per person per month for rural areas and Rs538.60 per person per month for urban areas. The minimum calorie intakes remain at 2,400 per day per person for rural areas and 2,100 for urban areas. The consumption basket has not changed in rural and urban areas since 1973/74. The rural and urban poverty lines are computed for each state separately.

Criticisms of this definition and its application concentrate on two topics. The first is whether the methods for determining calorie requirements are correct. The second focuses on how defining 'the poor' on a calorie-based poverty line does not reflect the real extent of deprivation, including making very inadequate allowance for other essentials like expenditure on housing, transport, education and health services. As far back as 1977, V.K.R.V. Rao observed that "Poverty has to be identified with deficiency in the total level of living" which includes "not only energy

requirements but also balanced diet needed for health, and other components of basic needs essential for human existence at tolerable level". Since then, many researchers and commentators have noted the inadequate provision in the official poverty line for what needs to be spent on housing, health and education in urban areas and on what asset base is needed to allow low-income households to cope with fluctuations in incomes or prices. Many also point to the limitations in having poverty defined only by income or consumption level – for instance how these fail to consider rights, entitlements and support for capabilities.

### **Uncovering facets of deprivation: the case of Pune**

To consider the validity of official definitions of poverty, the paper looks at poverty in Pune and considers how well official statistics reflect this poverty. Pune is a large, successful city whose population had reached almost 2.7 million by the 2001 census. Since 1940, a diversified, modern manufacturing sector has developed in the city which is now a major centre for India's engineering industry and growing in importance as an information-technology hub. Official statistics suggest that a very small proportion of Pune's population is poor – less than 2 per cent. Yet nearly 40 per cent of Pune's population (more than a million people) lives in slums. The city's rapid economic growth has been accompanied by rapid growth in both the number and the proportion of the city's population in such settlements. In 1969, 12 per cent of the population lived in slums.

A set of surveys in Pune's slum settlements from 1976 to 2003 give some insights into the processes by which slum dwellers' incomes, assets and living conditions change. A survey of households in seven distinct slum settlements in 1976 was followed by additional surveys in these same settlements in 1980 and 1988 and by a survey in 2003 in two of these settlements and in one additional settlement. Given how much the economy and wealth of Pune grew in this period, there was surprisingly little evidence of benefits in these settlements.

The period between 1976 and 1980 saw low-income slum-dwelling households struggling in the aftermath of an agricultural crisis and a severely fluctuating rate of inflation. There was little opportunity for income growth; indeed, increased participation in the labour market was sought, particularly by women, to prevent a decline in living standards. It was mostly women who had to take up onerous occupations (for instance domestic service, petty trading and waste-picking) at very low rates of remuneration. This did not increase per capita incomes for low-income households but it was crucial for their survival; at this time, two-thirds of the households surveyed had incomes below the poverty line.

From 1980 to 1988 in the slum settlements surveyed, average household incomes increased modestly in real terms. At the end of this period the proportion below the poverty line had reduced to around 43 per cent. But despite the city's rapid economic growth, including a rapid increase within the city in enumerated factory employment, the proportion of the slum dwellers employed in stable enumerated jobs did not increase.

During the period 1976 to 1988, half the poor households surveyed improved their incomes sufficiently to cross the poverty line but a third of the households above the poverty line in 1976 were below it in 1988. Over these 12 years, the sample households matured, their workforce became older, and their knowledge of the local labour market may have improved. The survey in 2003 in two of the seven slum settlements traced households who had been in the original sample in 1976 and who remained in the same location. The occupational structure of workers in 2003 was little changed from that of 1988. In 2003, most of the women were still in unskilled work, although the proportion was lower than in 1988.

It is difficult to argue that the benefits of economic reforms and local industrial growth were trickling down, raising the standard of living of the poorest. The longitudinal study in Pune shows the very limited opportunities for households to escape from their deleterious environments in slums. Lack of secure employment together with the lack of sufficient assets prevents them getting access to housing of adequate quality. Even when there are moderate increases in income, households remain trapped in dangerous environments. The incidence of sickness and malnutrition in children was demonstrated to be higher when the quality of the environment was worse.

### **Living conditions and health**

The number of people living in slums in Pune multiplied by a factor of more than 28 between 1951 and 2001, while the proportion living in slums grew from 7 per cent in 1951 to 39 per cent in 2001. To help assess housing conditions in Pune, four surveys are available – for 1937, 1954, 1967 and 1998.

The 1937 survey notes that many low-income households owned houses, but usually through inheritance. Even by the 1920s and 1930s, it was becoming increasingly difficult for people in lower-income categories to acquire either houses or legal land sites on which to build. This difficulty has continued. The 1937 survey also shows that rental costs were so high in relation to the incomes of the poor that a substantial proportion of the lower-income population was paying rents amounting to a fifth or more of total income. Between the 1937 and 1954 surveys, the proportion of families living in extremely overcrowded conditions (defined as less than 25 square feet per person, which is little over 2 square metres per person) increased from 23 to 31 per cent.

The 1967 survey reports that 35 per cent of houses (tenements) in the city received poor natural light and poor fresh air, while 41 per cent had poor sanitation. The survey also notes that about half of the tenements did not have separate kitchens. The proportion of families living in extremely overcrowded conditions was well above the 1954 value: around 37 per cent of families in formal housing and more than 45 per cent of the total population had less than 25 square feet per person. The 1967 survey notes the deteriorating housing conditions and the proliferation of slums and also that, given their low incomes, most residents had no possibility of moving to a better-quality home.

In 1967, the household income necessary to afford decent, authorized housing in Pune was at least Rs500 per month – but the official poverty lines for urban households in this year were less than half this amount. In 1967, most of those with below-poverty-line incomes did not live in slums – but in authorized buildings (mostly with extreme overcrowding and unhygienic conditions). Today, much of the low-income population lives in 564 different “slum settlements”. Most such settlements are on land that is unsuitable or unattractive for real-estate development – including many unsafe locations such as steep hillsides or low-lying areas subject to flooding. A proportion of these settlements have had some public provision for infrastructure but this requires the settlement to be officially recognized as a slum; 211 ‘slums’ have not been officially recognized.

Being illegal encroachments on vacant land, slums are never free from the threat of eviction. In Pune the local authority has conducted sporadic slum demolitions but the scale has not been large. An attempt by the local authority in the 1980s to remove several slums located on the slope of a hill (on top of which are historic temples) was foiled by the residents after a sustained

protest, including hunger strikes, demonstration marches, representations to the authorities and filing a legal suit. The slum population has grown because it is only in slums that the vast majority of low-income households can get shelter. However, it is no longer possible to occupy vacant land illegally without monetary payment (except perhaps in remote or highly unsafe sites) and there is an active housing market in slums. The price of housing in slums is determined by the perceived security of tenure, the location of the settlement and the level of provision of basic infrastructure. Dwellings in more consolidated settlements command high prices as well as high rentals.

The official poverty line does not take into account the monetary costs of living in unauthorized settlements, even though many households in the 'slums' are tenants, with payments for rent taking up a significant proportion of their household income. It also does not take into account other costs such as the risks involved in staying at unsafe locations, the insecurity arising from illegal occupation of land, and inconvenience or hardships and health costs caused by inadequate access to basic facilities.

### **Inadequate provision of basic facilities and daily hardships**

Even if a large proportion of the population lives in slums, provision for piped water within Pune has improved considerably. By 1998, more than two-thirds of Pune's households had independent water taps (compared to one third in 1979). However, this still means 32 per cent having to rely on shared water taps and most such households are likely to be within the 'slums'. In addition, having a tap does not guarantee a regular or reliable supply.

There are no recent statistics on provision of toilets in Pune – but in 1979, only a quarter of Pune families had independent toilets, with 59 per cent using shared toilets and 15 per cent having no toilet. Since 1999, the local authority has undertaken a large-scale programme of providing public toilets with washing facilities in the slums, which has certainly improved access to sanitation in many cases. However, insufficient water supplies, unsatisfactory cleaning, poor maintenance and the unwillingness of users to pay service charges results in many facilities in a poor state of repair and some unusable.

Official measures of poverty take no account of these deficiencies in provision for water and sanitation, and the health, monetary and time costs they impose on low-income households. A study of slum settlements and health in 1980 suggested that a significant proportion of malnourishment among the children in these settlements was due to sickness caused by the poor state of the physical environment.

### **Slum and shelter improvement**

In the seven slum settlements studied in 1976, 1980 and 1988, two-thirds of slum dwellers interviewed in 1976 remained on their original site in 1988. This is linked to the lack of any affordable, better-quality alternatives. Households have very limited capacity to move out of very-poor-quality housing. The settlements surveyed did benefit from government programmes to provide communal water taps and latrines, open drains, paved pathways and street lighting. But sanitation has not improved substantially because the services were not provided on an adequate scale, and they were not maintained properly. And the programme does not make provision to reduce overcrowding.



The resurvey in 1988 and the fourth survey in 2003 in two of the original seven settlements showed that most individual dwellings had improved. In the better-off settlement included in the 2003 survey, most houses had become permanent structures and more than a third had one or more storey added. Nearly 40 per cent of houses there had toilets inside the house, 60 per cent had individual water connections and all had electricity supplies. There was much less pressure on communal facilities and the community was careful to keep the environment clean. However, there are few other slums with comparable improvements. In addition, even in this improved slum, overcrowding increased very considerably between 1976 and 1988, going from 4.4 to 7.4 persons per room, and this came down to 6.7 in 2003.

In the worse-off settlement covered by all four surveys, house improvements were less striking. Most houses had become semi-permanent structures but only 3 per cent of households had individual toilets and only 20 per cent had individual electricity connections. Overcrowding had increased, going from 4.5 to 5.5 persons per room between 1976 and 2003. Over these years, there had been some improvements as the local authority provided communal water taps and communal latrines. In effect, the quality of the physical environment in this settlement had not changed significantly between 1976 and 2003.

### **The physical environment, health and the poverty line**

India's official poverty line does not take into account the multiple deprivations described above, and the consequent costs the poor have to bear in terms of uncertainty, anxiety, ill health, stress, hardships and inconvenience. Focusing only on income-poverty overlooks the possibilities of adopting measures that could not only alleviate poverty and bring relief to the poor but also help to avoid poverty. For instance, improving conditions in the slums with the unhealthiest environments could considerably reduce the incidence of sickness among residents and malnutrition among children. This would go some way towards helping the households avoid income-poverty and would also relieve some of the stress and indignity, and save time and physical effort. Improving environmental conditions in slums however requires not only the provision of basic facilities on an adequate scale, but also people's participation and vigilance in maintaining the facilities provided.

The argument for broadening the definition of the poverty line to include the quality of the living environment because of its linkage with health is distinct from that advanced in favour of including household expenditure on curative health services. Health problems are increasingly coming to be recognized as one of the prime causes of the slide into poverty, and addressing health problems needs attention to both healthy living environments and good-quality healthcare services.

In a survey of all slums in 2005, the Pune Municipal Corporation identified only 10,800 families in Pune as being below the poverty line (which was set at Rs591.75 – around US\$13 – per person per month). This implies that less than 5 per cent of the families living in abysmal conditions in slums in that year were poor. Within the total population of Pune, the incidence of poverty is officially measured as less than 2 per cent. (This figure has not been updated since 2005.)

Of four different poverty lines, including the current official poverty line, none makes allowance for the following costs: transport (despite the high proportion of income that many low-income households have to spend on transport, especially for those living in peripheral settlements), health care and education, safe and adequate access to water and provision for safe, easily accessed sanitation. No account is taken of housing conditions or security of tenure.

## Concluding thoughts

The narrow approach of the income-poverty line overlooks the multifaceted nature of human deprivation. As Saith comments, “This can easily lead to a superficial and misleading understanding of the nature and causes, as well as the cures of human poverty. The grave danger posed by the income-poverty line approach is that it inevitably leads to a misidentification of the poor, and subsequently to the adoption of targeting, monitoring and evaluation criteria which are equally narrow, thus carrying the many blind spots in the concept of deprivation into the operational phase of interventions” (Saith, 2005). The official poverty line, when applied to Pune, suggests that only 2 per cent of the population is poor, yet at least 40 per cent of the population “lives in poverty”.

Official discussions of poverty reduction are subsumed mostly under discussions of strategies for faster economic growth – yet in Pune, despite rapid economic growth over an extended period, the number and proportion of people living in poverty has increased rapidly. The longitudinal study of slum settlements shows there is only very limited upward mobility in the labour market. Increased labour-force participation of family members takes place as a result of an erosion of income earned by the main breadwinner (due to inflation and to increased dependency). Women are effectively a reserve labour force for the family under economic pressure (as suggested by Banerji, 1981).

As indicated by the survey findings from 1976, 1980, 1988 and 2003 reported above, the urban poor cannot be confident of a steady and stable growth in their incomes during periods of rapid economic growth in Pune. In addition, use of the conventional poverty line does not capture these vicissitudes in poor people’s livelihoods. As a result, the struggle of the poor for survival, and their strategies to survive in difficult circumstances, go unrecognized. Gaining a better understanding of these processes is necessary for designing measures that can help poor people to deal with poverty more effectively.

Although the account of the fortunes of some of these households may read like a success story, one also has to remember the multi-level forces stacked against the poor, and the fragility of the conditions in which they live. Consideration of income-poverty alone cannot capture this vulnerability, especially of those whose per-capita income hovers around the poverty line. Unless the precariousness of their situation and vicissitudes in their livelihoods are also taken into account, use of the conventional poverty line is unlikely to describe the lives of this group with accuracy.

The residents of slums are aware that the absence of security of tenure carries with it the risk of eviction. Yet, even with their low incomes, the poor gradually improve the quality of their dwellings. Though the rate of improvement is slow, it represents a precious investment made by the people of time, resources and labour. For the provision of basic facilities, however, residents are dependent on the local authority, and the inadequacies in this provision have been described above. Inadequate access to basic facilities imposes costs on slum dwellers, especially women, in terms of time, hardship and anxiety.

If official policies are to make a difference to the quality of life of the poor, the official definition of poverty must recognize these aspects of poverty and devise measures to alleviate them. As the findings of the longitudinal study indicate, even in the context of buoyant growth in the local economy, there is no certainty that improvements in earnings of low-income households can be sustained. Whatever income increases they can achieve are modest over a substantial period, and even households well above the poverty line have no escape from their degraded living

conditions and consequent ill health. The mainstream characterization of poverty, however, excludes any consideration of lived experiences of deprivation. Because these are not easy to quantify is no reason to disregard them. This paper concurs with Saith's suggestion that "poverty lines lie about the lives of the poor".

One particular issue is how city master plans fail to provide low-income groups with legal plots for housing, while rising land prices drive them out of formal land markets. The Housing and Poverty Alleviation Ministry has sent a directive to all state and city authorities to make "mandatory" land reservation for economically weaker sections and low-income groups in all housing projects. Yet this was also one of the key goals of the 1976 Urban Land (Ceiling and Regulation) Act that was recently repealed. It remains to be seen whether the new proposal is pre-election rhetoric or a policy measure that will be backed by political will to make its implementation effective. Such doubts are justified for Pune because much of the land reserved in the Development Plan for 1987–2007 for public purposes (including housing for the poor) was gradually de-reserved in favour of commercial residential development.

To conclude, we can return to the 1876 definition of the poverty line: "what is necessary for bare wants of a human being, to keep him in ordinary good health and decency". The key terms here are "good health" and "decency". As interpreted in the present paper, this minimum standard includes legal shelter and decent living conditions, and adequate access to basic services. Measurement of poverty based on this definition will show a much larger proportion of the urban population as poor than that officially acknowledged at present.

The design of poverty-alleviation measures to address these facets in addition to income-poverty will need to confront, among other issues, the political question of resource distribution in cities, especially land distribution. The possibility of this happening in the present era of privatization, liberalization and globalization must be limited. As noted by the mid-term appraisal of the Ninth Five Year Plan (1997–2002) (Planning Commission, Government of India, 2000), despite the stated commitment in official documents since the Second Five Year Plan (1956–61) to ensure access to housing by the poor, actual investments in this regard have been "niggardly and misdirected". The appraisal also observes that land use has largely been regulated by the markets or public authorities, and both have mostly excluded the poor. Very little has changed since then on the ground.

In this connection, analysts have argued in favour of making poverty reduction rights-based. "The Supreme Court of India has proved to be an effective spur to public action by widening the interpretation of the fundamental right to life and liberty" (Challiah and Sudarshan, 2001) to include the rights to livelihood, education and a healthy environment. However, when applied to the pavement dwellers in Mumbai, this did not support them living on pavements to pursue their livelihoods and suggested that they must be removed and may be provided with alternative pitches. While it recognizes that pavement dwellers live where they do to be close to their places of work for reasons of survival, the Supreme Court judgment also suggests relocation to a distant suburb which would take them away from their places of work and jeopardize their livelihoods.

The Supreme Court judgment represents a dilemma faced by the judiciary, and highlights a central contradiction in town planning (Bapat, 1990). Broadening the official definition of the poverty line to include dimensions of deprivation other than calorie consumption will draw attention to these issues, but will it compel the state to fulfil its obligation to address them as part of its intervention to reduce poverty?

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## **1 Introduction: the poverty-line debate**

A large proportion of India's population is poor. To distinguish the poor from the non-poor, a poverty line acts as a cut-off. The income that is needed to provide each individual with a certain specified minimum number of calories per day forms the basis for defining the official poverty line. There has been much debate and discussion over the years on this issue. The Planning Commission, Government of India, estimates the number and proportion of the poor in urban and rural areas in the country. It has claimed that the proportion of the poor has declined steadily over the years. The extent of poverty, however, is determined by how poverty is defined.

At present the poverty line is based on a minimum standard of living and sets a norm in terms of per capita consumption or income, and those who do not meet the norm are identified as the "poor". Government has a social obligation to eradicate poverty by designing appropriate policies and implementing them effectively. A poverty line serves a monitoring function in determining trends in poverty and assessing the impact of poverty-reduction policies.

This paper describes the early definition and subsequent development of poverty lines in India, and then assesses the limitations of the poverty line as an indication of real deprivation. It demonstrates that use of the official poverty line results in considerable underestimation of the extent of urban poverty, and oversimplifies the nature of poverty by disregarding or disguising the reality of the lived experiences of poor people. Using panel data from a longitudinal study of slum settlements in Pune, India from 1976 to 1988, and in some cases also to 2003, this paper examines the wider nature of poverty and works towards a better understanding of the numerous and interconnected aspects of deprivation.

### **1.1 Evolution of the definition of the poverty line**

In the pre-Independence period in India, the earliest attempt to define a poverty line was made by Dadabhai Naoroji in his classic paper on "Poverty in India" that he read in 1876 before the Bombay Branch of the East Indian Association of London (Srinivasan, 2007). He defined subsistence as "what is necessary for the bare wants of a human being, to keep him in ordinary good health and decency". He based the necessary consumption on the scale of diet prescribed by the Government Medical Inspector of Emigrants. His subsistence-diet-based poverty line excludes not only energy requirements for work but, as Naoroji himself states, also "all the luxuries, social or religious wants, expense on occasions of joy and sorrow, and any promise for bad season" (Naoroji, 1899 cited in Srinivasan, 2007). Some of these expenses are unavoidable and are socioculturally determined.

The second poverty line is contained in a note prepared for the guidance of subcommittees of the National Planning Committee of India of 1938. In popular discourse in the colonial period it was generally accepted that India, once a prosperous economy, experienced a severe decline after the advent of the British. Consequently, the entire nationalistic discourse was rooted in the belief that the increasing impoverishment of Indians was due to colonial rule. In 1938, the Indian National Congress constituted a National Planning Committee (NPC) headed by Jawaharlal Nehru, which declared that the social objective of planning in independent India would be "to ensure an adequate standard of living for the masses, in other words, to get rid of the appalling poverty of the people" (Mahendra Dev, 2008).

There was widespread poverty in India that had deepened during colonial rule. After political independence in 1947, therefore, reducing poverty was a priority. India embarked on the path of planned development of the country with the objective of removing “backwardness” through industrialization. In rural areas, redistribution of land was expected to bring about positive changes in the lives of the people. In reality, while the process of industrialization was boosted, especially through the Second Five-year Plan (1956–1961), land reforms were largely not implemented. The decade of the 1960s was truly turbulent, with two wars, unprecedented food scarcity and resultant inflation. By the late sixties, it was clear that even two decades after gaining political independence, a large proportion of the people remained poor. Social scientists, mainly economists, undertook the task of measuring the extent of poverty in the country and this became a major area of research in the 1970s. The focus on “poverty” was best captured by the slogan “Garibi Hatao” (“Remove Poverty”) used by Prime Minister Indira Gandhi at the time of the general elections in 1972.

## 1.2 Required minimum consumption

The first definition of the poverty line in post-independence India was attempted in 1962 by a working group of eminent economists. This group took into account recommendations on balanced diet made by the Nutrition Advisory Committee of the Indian Council of Medical Research (ICMR), and derived the poverty line by putting a price on the minimum required consumption levels of food, clothing, shelter, fuel, etc. (EGEP, 1993).<sup>1</sup> The group recommended that the national minimum for each household of five persons (with a total consumption need equivalent to that of four adults) should be not less than Rs100 per month (Rs20 per capita per month) at 1960/61 prices. For urban areas the figure was raised to Rs125 per month per household, to account for higher prices of commodities. This national minimum excluded expenditure on health and education as it was expected that these would be provided by the state. The Working Group also did not include housing costs as it assumed that there would be rent subsidy to the extent of 10 per cent of the minimum consumption.

Based on the poverty line recommended by the Working Group, the Perspective Planning Division (PPD) of the Planning Commission prepared a paper on “Perspectives of Development, 1961–1976: Implications of Planning for a Minimum Level of Living”. The PPD made a distinction between the basket of goods that individual households would need to acquire out of their own income and the basket consisting mainly of services that the state would provide. The value of the basket of goods to be acquired from household income was the poverty line. The PPD also made a distinction between households that are well integrated with income-generation processes and those that are not (because, for example, there is no earner in the household or they live at remote locations). “With the PPD’s poverty line, it follows that the reduction of poverty of the first group would be more or less automatic with rapid growth in income. The poverty of the second group, on the other hand, has to be addressed through income transfers for long durations of time” (Srinivasan, 2007).

The seminal work on “Poverty in India” by Dandekar and Rath was published in 1971. It generated much debate although it was not part of government effort to define the poverty line. It used National Sample Survey (NSS)<sup>2</sup> data on the distribution of consumer expenditure by major

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<sup>1</sup> We were not able to locate a copy of the report prepared by the Working Group. Other analysts have also been unable to locate it (Srinivasan, 2007). The details of the discussion on the minimum standard of living, therefore, could not be traced.

<sup>2</sup> Krishna (2003) raises questions about the efficacy and reliability of National Sample Survey data on which poverty figures are based. He attempted to utilize the existing NSS schedule which asks about

items for the rural and urban population. These data give the pattern of consumption of “food grains and substitutes” and “other items of food” for the rural and urban population. Based on the recommendation of nutritional experts, the authors claim that the availability of 2,250 calories per capita per day for both rural and urban areas is “adequate at least in respect of calories” under Indian conditions. The next step is to find the level of expenditure at which this calorie intake is possible. The level of expenditure needed is the total expenditure that the consumers make including “fuel and light”, “clothing” and “others”.

The authors state that “others” is an important category in urban areas as people have to spend on items such as housing. This is one of the reasons why expenditure required to be above the poverty line in urban areas is higher than in rural areas. In addition to prices being higher in urban areas, urban people take their calories from more expensive items of food (such as edible oil, ghee and butter, sugar, milk, meat and fish). Thus, though it is the calorie norm that is used for identifying the poor, the expenditure on food and non-food items together gives the required level of total expenditure needed to attain the level of calorie consumption that defines the poverty line. When converted into expenditure in rupees it is Rs180 per capita per annum for rural areas and Rs270 per capita per annum for urban areas, both at 1960/61 prices.<sup>3</sup> The authors provided for variation in prices in different states and worked out poverty lines pertaining to individual states.<sup>4</sup>

The Planning Commission, Government of India, set up a Task Force on Projections of Minimum Needs and Effective Consumption Demand in 1979 which redefined the poverty line. The Task Force used the age-sex-activity-specific calorie allowances recommended by the Nutrition Expert Group to estimate the average daily per capita requirements for rural and urban areas. Thus the impact of differences in age, sex and occupation on average calorie requirement was captured to the extent made possible by the data. The daily calorie norms accepted were 2,400 for the rural consumption basket and 2,100 for the urban basket. The monetary equivalent of these norms or the poverty line was based on the 28th round of NSS for 1973/74. It was found that, on average, at 1973/74 prices, the consumer expenditure of Rs49 per capita per month was associated with intake of 2,400 calories per day in rural areas and Rs57 per capita per month with intake of 2,100 calories per day in urban areas. State-specific poverty lines were arrived at by valuing the consumption at state-specific prices. Over the years, the poverty lines have been updated by adjusting for inflation, retaining the calorie norms based on the NSS data for 1973/74.

In 1993 the “Expert Group on Estimation of Proportion and Number of Poor”, or the Lakadawala Committee, appointed by the Planning Commission submitted its report. This committee was expected “to look into the methodology for estimation of poverty at national and state level and also to go into the question of re-defining the poverty line, if necessary” (EGEP, 1993). The

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quantities of 380 items consumed by the household over the previous 30 days. The households being interviewed refused to respond after only part of the questionnaire had been completed. When he and his wife tried to complete the questionnaire they had to depend on a lot of guesswork.

<sup>3</sup> The poverty line defined by Dandekar and Rath is based on very frugal consumption. The rural poverty line is much lower and the urban slightly lower than that prescribed by the Working Group in 1962. This is so despite the exclusion by the Working Group of the subsidy to urban households for housing and also expenditure on health and education to be provided by the state presumably free of cost.

<sup>4</sup> For urban Maharashtra the poverty line in 1960/61 was Rs30.83 per capita per month (Rs370 per capita per annum), which is much higher than that for urban India. This shows the need to make provision for regional variation in prices for the minimum consumption basket while calculating poverty lines.

Committee recommended that “the poverty line approach anchored in a calorie norm and associated with fixed consumption basket be continued”. It defined rural and urban poverty lines as levels of household per capita consumption expenditure at which average rural and urban energy norms respectively were met, in the distribution of per capita household consumption expenditure (and its energy content), as in the 28th round (1973/74) of NSS.

The consumption baskets bought by the households with per capita expenditures around the poverty lines were chosen as the poverty baskets. Thus, the Committee attempted both to anchor the poverty lines rigidly to average energy norms and also to ensure that the poverty baskets would be bought by consumers (Srinivasan, 2007). It also recommended that the norms of per capita daily intake of 2,400 calories in rural areas and 2,100 calories in urban areas be continued for all states in the country. For maintaining consistency, it recommended that use of 1973/74 as a base should be retained.

The Committee also recommended some modifications to the previous approach. It suggested poverty should first be assessed per state, and that these values should then be aggregated for deriving all-India estimates. It also recommended the adoption of price indices and deflators related to consumption around the poverty lines. Further, it recommended the abandoning of the NSS–NAS adjustment procedure, which was as follows. The National Accounts Statistics (NAS) gives estimates of Private Final Consumption Expenditure (PFCE). The NSS estimates of Household Consumption Expenditure (HCE) were found to be significantly lower than PFCE. Thus the practice was to “adjust the NSS-based size distribution by uniform scalar correction obtained by shifting the NSS distribution uniformly to the right by the ratio of per capita PFCE to per capita HCE” (Sundaram and Tendulkar, 2005). As recommended by the Committee, this procedure is no longer used.

### **1.3 Current official poverty lines**

The latest large sample survey by the National Sample Survey Organisation covers the period from July 2004 to June 2005. This is the 61st round of the NSS, and gives data on distribution of household consumer expenditure. The all-India official poverty line for 2004/05 is Rs356.30 per person per month for rural areas and Rs538.60 per person per month for urban areas. The minimum calorie intakes remain at 2,400 per day per person for rural areas and 2,100 for urban areas. By merely adjusting the 1973/74 poverty line for changes in prices, the poverty line for subsequent years is estimated. The Consumer Price Index of Agricultural Labourers (CPIAL) for rural areas and Consumer Price Index for Industrial Workers (CPIIW) for urban areas are used for updating the poverty line. This method therefore assumes that the consumption basket has not changed in rural and urban areas since 1973/74. The rural and urban poverty lines are computed for each state separately.

The NSS uses two recall periods. The first generates consumption data collected by using a 30-day recall (or reference) period for all items (the Uniform Recall Period or URP). The other distribution is based on consumer expenditure data collected using a 365-day recall period for infrequently purchased non-food items, namely clothing, footwear, durable goods, education and institutional medical expenses plus a 30-day recall period for remaining items (Mixed Recall Period or MRP). Based on these two recall periods, two poverty estimates are available for India and the states.

The official poverty line estimated in this way tells us that persons with a certain monthly per capita consumption expenditure (mpce) *can* consume, at the current price level, a consumption basket which ensures the required daily allowance (2,400 and 2,100 calories in rural and urban areas respectively). It follows that those who have mpce levels lower than these levels *cannot*

consume that basket and hence are identified as “poor”. Those who have the specified mpcpe level are regarded as being above the poverty line. In reality they may or may not actually consume the required dietary allowance.

## **2 Shortcomings in the official poverty line**

The methodologies used for the estimation of poverty lines,<sup>5</sup> and the resultant poverty estimates, have been widely debated. There are two main strands of criticism on methodological issues in the measurement of poverty. The first strand accepts the calorie-norm framework but raises many important issues within it, including various deficiencies in the method of determining calorie requirements. The second strand of criticism states that calorie-based poverty estimates do not reflect the real extent of deprivation that poor people suffer. This strand suggests extending the definition of poverty beyond the “calorie norm” and supports inclusion of other essentials like expenditure on housing, education and health services necessary for a “decent” life. Others have pointed out that there are serious weaknesses overall in the poverty-line approach, and argue that it involves making assumptions and choices which can undermine attempts to reduce poverty. These two strands of debate are discussed further in the next two sections below.

### **2.1 Deficiencies in the calorie norm**

Critics of the current official poverty-line methodology believe that the consumption of the normative calorie intake no longer measures the same thing as it did in 1973/74. The poverty line for 1973/74 was based on the rupee equivalent of the calorie norm which was accepted then as minimum, i.e. 2,400 calories per person per day for rural areas and 2,100 for urban areas. For the period *after* 1973/74 the poverty lines are arrived at by merely adjusting the 1973/74 poverty lines to account for changes in prices. This method assumes that the rural and urban consumption baskets have remained unchanged since 1973/74. This assumption has been criticized by Patnaik (2004, 2006), and Mehta and Venkatraman (2000). Patnaik (2006) argues that there are problems associated with using a distant base year. Besides this, if “the index (price) itself is being applied to a fixed consumption basket relating to an increasingly distant base year for quantities consumed, then the method cannot capture many important structural changes leading to the actual increasingly higher cost of accessing nutrition”.

The poverty line is currently arrived at in an “indirect manner”. However, it is claimed that using the direct method is more accurate and is easily possible (Patnaik, 2006). The direct method is to identify the consumer expenditure of that section of the population which consumes foods possessing a calorie content equivalent to the specified calorie norm. This consumer expenditure would be the poverty line and every individual falling below it would be counted as

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<sup>5</sup> The US\$1 per capita per day poverty line used for inter-country comparisons by most international agencies is based on the Indian poverty line (Sen, 2005). The latest set of global poverty estimates has been released in a recent World Bank working paper, *The Developing World is Poorer than We Thought, But No Less Successful in the Fight Against Poverty* (Chen and Ravallion, 2008). It employs a poverty line of US\$1.25 per day at 2005 purchasing power parity (PPP) which is the average of the national poverty lines (in terms of consumption per capita) of the poorest 15 countries in the world. There has been compelling criticism of these estimates, and an examination of the underlying database and the methodology for estimating poverty across countries suggests that the assumptions behind the adjustments and the quality of the data obtained from the International Comparison Programme limit the usefulness of such an exercise for cross-country comparisons. For India, these estimates suggest severe underestimation in the official numbers on poverty. (See *Economic and Political Weekly*, Vol. XLIII, No. 43, 25–31 October 2008.)



“poor”. In contrast, the indirect method which has long been used involves revaluing the poverty line of 1973/74 with some price index. If the price index maintains the real purchasing power, then the indirect method would be relevant but this has not happened. The poverty estimates derived from the direct and indirect methods have been diverging substantially over the years, with those based on the direct method showing greater numbers in poverty.

One of the recent criticisms levelled against poverty estimates is based on the changes in the “reference period”. Starting from the 1950s, the National Sample Survey Organization (NSSO) has been using a 30-day recall period for all goods. However, between 1994 and 1998 (i.e. from the 51st to 54th rounds), the NSSO used two alternative questionnaires. The first was the traditional questionnaire which used a 30-day recall period for all goods. The second was the experimental questionnaire which used “mixed” recall periods: 7 days for food and tobacco (high-frequency goods); 365 days for low-frequency goods such as clothing, footwear, durables, education, institutional medical expenses; and 30 days for other goods. The expenditure on most items was higher with the experimental questionnaire than with the traditional one. In the case of food the increase was to the extent of 30 to 35 per cent. Further it was claimed that the mixed recall period “contaminated” the responses for the traditional period. The poverty ratio derived from the mixed reference period questionnaire was much higher than that from the traditional questionnaire (Deaton and Kozel, 2005).

In the 55th round of the NSS, a “compromise” was reached whereby for food and tobacco each household was asked to report all items consumed over both a 7-day and 30-day recall period. At the same time, the traditional 30-day recall period for durables, footwear, clothing, education and institutional medical expenses was replaced by a 365-day recall period. This design is not comparable to the previous survey. The changes in the recall period led to considerable debate around the appropriateness of the recall period. The debate also had an ideological orientation as the change in the recall period was initiated after the opening up of India’s economy in 1991. Thus, whether or not poverty has decreased after the liberalization process was started became a muddled issue. Due to the lack of comparable data for the pre- and post-reform periods, the implications of reforms on poverty are not clear.

The poverty-line methodology has been criticized by nutritionists on two counts. Firstly, they argue that merely being dependent on calorie norms for poverty estimation is not correct because adequate calorie consumption may not ensure sufficient intake of other dietary elements such as proteins, fats and micro-nutrients which are essential for a healthy life (Sen, 2005). Secondly, there is a distinction between gross calorie intake and net calorie absorption. If there are gastro-intestinal problems, then even with adequate calorie intake a person may suffer from malnutrition (Sen, 2005). It has also been pointed out that the calorie requirement norm does not take into account the higher energy intake required for the hard and extended labour usually performed by poor workers (Dasgupta, 1993).

The opposite view is expressed by Sukhatme (1977, 1982) who argues that human bodies can adapt to extended bouts of low nutrition while maintaining normal energy output. He denies the vicious-cycle hypothesis that adaptation to lower intake will lead increasingly to low productivity, low levels of income and hence greater poverty. Sukhatme criticizes the methodology adopted also by Dandekar and Rath, and later the Lakadawala Committee. The main thrust of his argument is that those authors have mistaken the average energy needs of an individual for the minimum need, ignoring the fact that energy needs vary between and within individuals even of the same age–sex groups. He argues that the energy needs of an individual are subject to considerable inter- and intra-individual variation. An individual’s capacity for work is not

determined by their intake but by the efficiency with which they convert food energy into metabolism energy over their homeostatic range of intake.

The methodology for estimating poverty lines has been criticized for focusing on poverty rather than undernutrition. It tells us that above a certain consumption level it is possible to have the required dietary allowance. However, it is not certain that a person or a household actually consumes this minimum requirement. Thus it is possible to have “paradoxical” results where poor households could be “not undernourished” and vice versa (Sen, 2005).

For defining the poverty line, the consumption basket is identified separately for rural and urban areas. However, it is used uniformly across all the states in the country. This is regarded by some as questionable, as in many states the consumption patterns and basic needs differ from the all-India average (Radhakrishna and Ray, 2005). Guhan, a member of the Lakadawala Committee, criticizes the Committee Report for standardizing the calorie norm and consumption basket over all the states in India. He argues that in a country as large and diverse as India, these parameters vary considerably across the states because of the differences in climate, terrain, local availabilities of cereals and other food items, and cultural preferences (EGEP, 1993).

Critics have further pointed out that people’s tastes and preferences have changed significantly, and the current poverty line does not take this into account. Similarly, the consumption basket has remained unchanged since 1973/74. Mehta and Venkatraman (2000) state that the expenditure patterns of both rural and urban populations have undergone changes. There is a shift in expenditure from cereals to non-cereals like pulses, edible oil, vegetables and milk products. This shift can be observed even for people below the poverty line. Mehta and Venkatraman argue that, given this shift, the same level of expenditure, even in real terms, would not be able to meet the minimum calorie requirements.

Radhakrishna and Ray (2005) argue that, as there has been a shift in favour of non-cereal food, at the current pattern of consumption the poverty line no longer provides the minimum calories to which it was first benchmarked. Hence the poverty line has lost its nutritional relevance over time. They argue that the poor may not choose to buy the same consumption basket, even if the poverty line is adjusted to account for inflation. Further, they point out that the recommended dietary allowances for heavy work, moderate work and sedentary jobs stipulated in 1973/74 may need to be revised because of technological changes in both rural and urban areas.

## **2.2 Broader perspective on poverty**

The first critique of poverty lines based on calorie consumption as being too narrow was made by V.K.R.V. Rao (1977, cited in Dandekar, 1994). He observes that “Poverty has to be identified with deficiency in the total level of living. And total level of living includes not only energy requirements but also balanced diet needed for health, and other components of basic needs essential for human existence at tolerable level.”

Kozel and Parker (2005) have examined poverty in Uttar Pradesh, one of the poorest states in India and home to an estimated 8 per cent of the world’s poor. Their definition of poverty is “an unacceptable deprivation in well-being”, and they use the conventional quantitative data on poverty, i.e. the Planning Commission estimates. However in addition, they have also carried out a range of consultations with poor communities using discussions and open-ended interviews. Although these consultations do not give any statistical estimates, they do provide interesting insights into the phenomenon of poverty, and provide context for the conventional statistical estimates. The authors see “poverty in terms of lack of assets combined with low and uncertain

returns to the limited stock of assets owned by the poor". Further, they point out that the poor suffer from poverty of private resources, poverty of access to public goods and services, and poverty of social relationships.

While the current official poverty line is based on the consumption basket taken from the NSS data for 1973/74, Mahendra Dev and Ravi (2008) observe that this basket hardly includes any expenditure on health and educational services as these were expected to be provided by the state. However, over the years, households have been spending increasing amounts on these services, which should therefore be included when estimating poverty. Mahendra Dev and Ravi state that this can be done in two ways. The first is to account "merely" for the actual expenditure on health and education incurred by the poor. Thus the actual expenditure incurred by the people whose income approximates the poverty line can be added to find the revised poverty line. They further argue that this would not be a "normative" level as the current level of expenditure incurred by the poor need not represent the minimum need. They therefore develop a normative measure from the median household expenditure on education and health. They agree that this is somewhat arbitrary but argue that this method is better than the first one. They adjust the poverty line accordingly and arrive at all-India revised estimates of numbers living in poverty which are greater than the official poverty estimates.

Reddy et al. (2006) suggest an approach to deprivation based on the Capability Approach developed by Amartya Sen (1999). They state that Sen has argued persuasively that poverty must be seen as deprivation of basic capabilities rather than merely as lowness of income. Capabilities are the "substantive freedoms (a person) enjoys to lead the kind of life he or she has reason to value"; and "What the capability perspective does in poverty analysis is to enhance the understanding of the nature and causes of poverty and deprivation by shifting primary attention away from *means* (and one particular means that is usually given exclusive attention, viz. income) to *ends* that people have reason to pursue, and, correspondingly, to the *freedoms* to be able to satisfy these ends." (Sen, 1999) Reddy et al. further argue that a meaningful poverty line should reflect the cost of achieving basic human requirements, though they agree that there can be disagreement about how to understand such requirements.

"Capability poverty" has also been defined as the lack of being well nourished and healthy, lack of capability to be educated and knowledgeable, and not being able to be supported and sheltered (Radhakrishna and Ray, 2005). The National Council of Applied Economic Research has measured capability poverty as a simple average of the percentage of births unattended by trained personnel, the percentage of stunted children and female illiteracy rates (Shariff, 1999).

Focusing on "fundamental and fatal" weaknesses of the income-poverty-line approach, Saith (2005) observes that this methodology involves making assumptions and choices which undermine the usefulness of the approach, for example the choice of adult equivalent scales, the use of price indices, the choice between income and expenditure. In this approach the level and types of public provision of goods and services are usually excluded. Since access to such public provision is often greatly unequal across locations, and within communities, this gap constitutes a serious weakness, especially in cross-sectional and inter-temporal comparisons.

Further, the income-poverty approach does not take into account the levels of asset ownership that determine the ability of households to face fluctuations in income. In using the household as the basic unit it also ignores the gender inequality and intra-household disparities in access, consumption and other entitlements. As each household is treated independently, all relational dimensions are missed and the high level of spatial and identity-based social exclusion that the

poor suffer is omitted. The poverty-line approach also excludes insights of the poor themselves on their deprivation. This self-perception is crucial for designing developmental intervention.

Srinivasan (2007) points out that the prevalent poverty measures are very limited in focus, and argues that the current official poverty lines are incoherent, being neither social norms nor having a foundation in nutritional science. He calls for a new approach to poverty measurement by anchoring poverty in “social norms”, and distinguishing between goods and services to be bought by households and those to be supplied by the state. Though he is in favour of a multidimensional approach to poverty, he cautions that “collapsing many relevant but not necessarily commensurate dimensions into a single index defined as an arbitrary weighted sum of disparate indexes makes little sense”. He puts forward an approach to poverty eradication that defines a set of rights to which each citizen is entitled and asks if we can make the set broad enough to include those entitlements that would preclude the citizen from being poor.

The need to go beyond the prevailing paradigm of income-poverty and adopt a rights-based approach to poverty eradication is also expressed by Chelliah and Sudarshan (2001). They argue that after more than five decades of fighting poverty with less than satisfactory results, the time might have come to adopt a rights-based approach to poverty eradication: “A rights-based approach focuses not only on the protection (appropriate in the case of civil and political liberties) but also on the promotion of a more comprehensive set of rights through positive public action.... There is an advantage in perceiving these necessities of human life as an integral part of human rights, which would imply a recognition that poverty is a brutal denial of human rights.”

This criticism of the narrow definition of the official poverty line based on the calorie norm, because it fails to capture the multifaceted deprivation faced by the poor, suggests the need to develop a new methodology to ascertain the real extent of deprivation. Some of the weaknesses in the conventional methodology related, for example, to gender bias or social exclusion of the poor are connected with the wider processes of social change. Although these problems are part of the reality of the lives of poor, it is not easy to accommodate them in the measurement of poverty. Analysts have not suggested in concrete terms how this can be achieved. By using longitudinal survey data, this paper demonstrates how poverty can be understood more realistically.

### **3 Uncovering facets of deprivation**

Supporters of the “calorie-norm” methodology for defining poverty could argue that even this minimum consumption level is not being reached by a substantial proportion of the population, and that the priority should therefore be to estimate the number of such families and design policies to reduce the calorie deficiency. Other dimensions of poverty and deprivation, this argument states, can be identified and addressed subsequently. A counter-argument is that the expenditure on non-food essentials has become so high that the poor may need to forgo food consumption to meet the other costs. In other words, at certain expenditure levels while it may be possible for households to consume the required minimum calories, in reality they may be unable to do so because of the cost of other non-food expenses like housing, transport, education and healthcare.

It has also been pointed out that the income-poverty-line approach is essentially one-dimensional and overlooks the multifaceted nature of human deprivation. “The dominant methodology renders a good deal of poverty invisible, distorts the understanding of poverty, and thereby does disservice to the cause of poverty reduction” (Saith, 2005). This line of reasoning is also suggested by the examination of facets of deprivation outlined in this paper, which looks

specifically at urban poverty. The conventional methodology currently used for identifying poverty, being a static approach, fails to capture adequately the precarious economic circumstances of the poor and their vulnerability to the changing factors affecting their livelihoods. To include these factors, an analysis would require panel data collected systematically over a sufficiently long period of time.

The analysis presented below is based on a longitudinal study of low-income households in Pune (formerly called Poona) in the State of Maharashtra in central-west India. This illustrates the changing fortunes of low-income households over a period of 12 years (and for a subsample over a quarter of a century). The study captures changes in occupations, income and workforce participation. This analysis also assesses living conditions, including access to basic facilities, and examines determinants of health. The objective is to explore causal links between household income, access to housing and basic services, and health.

Maharashtra is one of the most urbanized states in India, with 42 per cent of its population living in towns and cities. It is also a relatively industrialized state of India. Pune has been an established urban centre since the early 18th century. Since 1940 however, it has experienced rapid growth of a diversified, modern manufacturing sector. Pune is now a major centre of engineering industry in India, and has lately also gained prominence as an information technology (IT) hub. Over the years the city has seen a steady growth of population. According to the Environmental Status report for 2001–02 prepared by Pune Municipal Corporation (PMC), the population increased from 856,000 in 1971 to 1.2 million in 1981, reaching 1.56 million in 1991 (decadal growth rates of 34.4 and 36 per cent, respectively) and almost 2.7 million in 2001 (a decadal growth rate of over 72 per cent).

Over approximately the same period, the population living in slum settlements increased dramatically from about 92,000 in 1968 (Pune Municipal Corporation, 1969) to 377,000 in 1981 and 569,000 in 1991 (Pune Municipal Corporation, 2002). This represents an increase from about 12 per cent of the total population in 1968 to 31.3 per cent in 1981 and 36.5 per cent in 1991. The migration into Pune that gave rise to the rapid growth of slums was exacerbated by severe drought in the eastern districts of Maharashtra that occurred in the late 1960s and especially in the early 1970s. More than a million people in Pune now live in slum settlements, and account for nearly 40 per cent of the city's population.

### **3.1 The longitudinal study in Pune**

This section documents the struggle for survival of households living in seven distinct slum settlements in Pune. The data were collected in 1976, 1980 and 1988, following the same sample households selected in 1976. The three surveys were each carried out for a different purpose. The survey conducted in 1976 came soon after the phenomenal increase in the number of slum dwellers in Pune. It examined the pattern of migration, rural links, and occupational and spatial mobility of the sample households. In 1980 the focus was on determinants of health. The data collected at these points enabled the development of household-level models of employment and health determination. This analysis prompted the third survey in 1988 to investigate household occupational characteristics eight years after the last of the previous surveys. In 2003, more than a decade after the new economic policies were initiated in India, the sample households that still remained in two of the surveyed settlements were studied again. In addition to this cohort of 1976, a new slum settlement that contained a majority of residents who came to the city after 1976 was added in order to understand the situation of low-income households in the city generally.

In 1976, when the first survey was conducted there were over a quarter of a million people living in 327 slum settlements spread across the city area. The distribution of such settlements, as it emerges from even an aggregate picture of their character and dynamics, is by no means random but makes up a highly complex and differentiated system closely related to the history and economic base of urban development as a whole (Bapat, 1981). The seven slum settlements surveyed were selected to contrast certain characteristics of their populations: duration of residence in the city, location and occupational structure. They include old settlements in the inner city, newly established settlements that provide shelter mainly to distress migrants, and consolidated settlements away from the central locations that house workers in stable and secure employment. These settlements represent a complex system that has evolved in response to the needs of different types and successive generations of migrants each faced with a specific set of circumstances and possibilities within the urban context.

The survey conducted in 1976 showed that nearly 15 per cent of the households included residents of Pune who had been there for at least two generations, but a much greater proportion consisted of in-migrants, often of quite long standing in the city. The households were family based and committed to urban living in that they had no option of "retreat" to the place of origin. Slum dwellers were employed in a wide range of occupations open to those officially termed "economically weaker" and socially inferior. A majority of earners, however, were unskilled and casual labourers or daily wage earners. Their jobs offered little by way of security, regularity of income or workers' benefits. Nearly two-thirds of the households earned incomes below the subsistence level.

An historical account of the economic activities of earners revealed that there was very limited upward mobility. Longer urban experience did not necessarily ensure access to stable formal employment. A large section of the labour force was not able to compete successfully for formal-sector jobs. The slum population therefore consisted of two non-competing groups. The first group was employed in modern-sector jobs, mainly due to relatively higher levels of schooling and social standing in the caste hierarchy, and contacts with those in formal employment who could help them in securing jobs. The second group, and the large majority, was effectively barred from formal employment due to lack of qualifications and contacts.

The first sample survey conducted in 1976 consisted of 605 households with the subsample in each of the settlements being a systematic quasi-random one, disproportional to the estimated total number of households in each settlement (and averaging 8 per cent of the settlements' populations). In 1980, 480 households (79 per cent of the original sample) were interviewed. At this time, since the focus of the survey was the effect of the physical home environment on morbidity and child health, there was no attempt to find those who had moved out of the sample settlements or households. In 1988, 390 households (64.5 per cent of the original sample) that had stayed on in the sample settlements were interviewed for the third time. Altogether, 215 households had left the sample by 1988. They may have been upwardly or downwardly mobile. They were, however, similar in income characteristics to those that were to remain. The available information does not suggest that the departing households were otherwise significantly different from those that remained. Their experience, therefore, is not likely to be substantially different from that of those followed until 1988.

## 4 Employment, income and social mobility

### 4.1 Employment strategies for preservation of income

From 1976 to 1980, low-income households in Pune, faced with severe rises in the cost of living, resorted to increasing their workforce participation in order to preserve their standard of living, low as it was. This was particularly so in the poorest of these households. Women aged 25 to 40 from such households were especially involved in preventing the erosion of their families' incomes. These were more mature households, in which adult women took up remunerated work after their early years of childbearing. The work most of them found was in domestic service, petty trading and waste-picking, and as miscellaneous casual labourers including building construction workers. The work was tedious, unpleasant and poorly paid. However, the contribution made by women in this period, when average per capita incomes of low-income households failed to increase, was crucial for their survival (Bapat and Crook, 1988; 1992). Over the subsequent eight years, women continued to contribute to their family incomes with participation rates even higher than before (though increasing less rapidly).

By 1980, the greatest increase in labour force participation came from households that had been resident in Pune for up to five years in 1976, whereas it was much less among those with longer duration of stay. It is possible that recent arrivals (i.e. those who came between 1970 and 1975) could not immediately attain the level of workforce participation that they desired, but succeeded during the years of the study. Households of longer duration of stay in Pune, on the other hand, had in all probability achieved their optimal level of participation before the study began. Since most new entrants found work as unskilled and casual labourers it appears that entry to even the informal or un-enumerated sector of the economy is neither easy for all nor immediate. This is consistent with findings of some other case studies (Bremen, 1976).

### 4.2 Increase in real incomes without sustained occupational upward mobility

During the 1980s, when the average rate of inflation was moderate but steadier than before, average household incomes enjoyed a modest real increase. However, as shown by the relative stagnation in the occupational structure of households over the 12-year period (Table 1), most were unable to achieve substantial and sustained upward mobility. During the period of eight years from 1980 to 1988, after allowing for the rise in the cost of living, a significant change had taken place in the real income of the cohort of 390. The proportion of households whose per capita incomes (adjusted for change in demographic composition) were below the poverty line<sup>6</sup> (Dandekar and Rath, 1971) had fallen to 43.2 per cent, from 66.6 per cent in 1980. This contrasts markedly with the earlier period (1976 to 1980) when the proportion barely changed.

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<sup>6</sup> It was used here as a convenient yardstick to make comparisons. We use the poverty line for Urban India (Rs22.50 in 1961). Of this amount, 70 per cent is calculated to be spent on food consumption to obtain a nutritional level of 2,250 calories per day per individual. To calculate per capita income the following scale of consumption has been used.

Age group (male and female)	0–4	5–9	10–14	14+
Consumption units	0.45	0.65	0.85	1.0

There is considerable variation in the literature with respect to consumption units for various age groups (Muller, 1976). For the purposes of this study the scale adopted by UN has been used, with a slight modification. Instead of 0.75 consumption units per female aged 10–14 years, the same consumption scale as for males in that age group of 0.85 units has been used. Various studies have shown that the use of equivalence scales may under-state (or over-state) the extent and depth of poverty as it fails adequately to take into account non-food costs especially for children (such as costs of keeping a child in school or providing healthcare) and economies of scale in the household (Satterthwaite, 2004).

Each income decile enjoyed a substantial real increase in per capita incomes, averaging over 4.5 per cent per annum. At the same time a significant proportion of households suffered a decline in income, indicating the unstable nature of income increases among low-income households. Furthermore, over the 12-year period, income distribution became more skewed. Thus, in terms of income strata, growth was a differentiating process for the low-income households.

During the 1980s the local industrial economy was buoyant and expanding. Estimating by log-linear regression from published data on enumerated factory employment, the annual average increase in factory employment was 3.1 per cent in Pune district between 1976 and 1987. This was above the national increase in factory employment for the period. Despite buoyant industrial growth in the area, however, especially after 1980, the proportion of those employed in stable enumerated-sector jobs among slum dwellers in Pune did not increase. The proportion of earners employed in the enumerated sector as a whole remained virtually the same throughout the period of 12 years (see Table 1). Of those who changed their occupations or entered the labour market for the first time, only 7 out of over 400 obtained employment in the industrial sector, despite the unprecedented growth in the Pune region.

The buoyancy of the developing local economy may have had the salutary effect in the 1980s of creating opportunities to get out of the least desirable work. A possible indirect effect of the expansion of industrial employment may have been in the improved occupational composition at the lower end of the occupational spectrum. There was a small but distinct decline in the proportion of workers in the 390 cohort who were employed in the wholly unskilled or informal service sector (Table 1). However, the struggle for survival in the 1970s forced female labour into that sector in the first place and indeed 81 per cent of women working outside the home were still in the lowest occupational group in 1988. Despite these qualifications, there was consistency in the increase in earnings across all occupational strata, averaging about 6 per cent per annum in real terms.

**Table 1: Occupational structure in the sample households by gender, 1976, 1980 and 1988**

	Percentage distribution			
	1976**	1980*	1988*	(1976)*
<b>Males</b>				
Group 1 (service and wholly unskilled)	58.8	58.8	49.8	(56.3)
Group 2 (traditional skills)	15.9	16.3	22.4	(16.9)
Group 3 (modern skills)	9.8	11.1	13.4	(11.0)
Group 4 (factory and organized)	15.5	13.8	14.4	(15.8)
	100.0	100.0	100.0	(100.0)
	(n=646)	(n=558)	(n=536)	(n=526)
<b>Females</b>				
Group 1 (service and wholly unskilled)	88.0	88.0	80.7	(83.6)
Group 2 (traditional skills)	6.0	10.4	12.4	(8.6)
Group 3 (modern skills)	0.6	0.5	3.0	(2.3)
Group 4 (factory and organized)	5.4	1.1	3.9	(5.4)
	100.0	100.0	100.0	(100.0)
	(n=167)	(n=183)	(n=233)	(n=128)

Notes:

\* data for 390 households remaining in the sample by 1988;

\*\* data for households remaining in the 1980 sample.



In 2003, more than a decade after the new economic policies were initiated in India, a fourth survey in two of the seven slum settlements was carried out. It traced households belonging to the original sample that remained at the same location. One of the slums was the poorest and the most recent settlement in 1976 (which in 2003 retained 41 per cent of its original sample households) and the other was a more consolidated settlement that had a relatively high proportion of workers in organized-sector employment (which in 2003 retained 52 per cent of its original sample households). In addition, household members who had moved elsewhere in the city were also traced and surveyed. A third settlement, with a majority of post-1976 migrants plus some older households, was selected and surveyed in order to understand the situation of low-income households in the city more generally.

Findings of this survey show that the occupational structure of workers in 2003 was marginally different from that in 1988 (Bapat, 2004). The proportion of workers in the organized sector had declined in 2003. In the poorest settlement, reliance on unskilled work (including waste-picking) declined significantly (from 63 per cent to 42 per cent) and a higher proportion of workers was engaged after 1988 in jobs involving traditional skills. In the third settlement which was surveyed for the first time (consisting of a majority of post-1976 migrant households), a large majority (62 per cent) was engaged in unskilled casual labour.

Taking the 2003 sample as a whole, the occupational characteristics that emerge are only slightly different from those found in the earlier surveys. The proportion of workers engaged in factory and organized-sector jobs was, in fact, lower than in the 1988 sample, especially among men. At the lowest end of the occupational structure, the proportion of workers in wholly unskilled work in 2003 was also less than in the 1988 sample. Most of those moving out of unskilled work entered jobs involving traditional skills. A large majority of women continued to do unskilled work in the 2003 sample, although the proportion was lower than in 1988. None of these jobs offers security or worker's benefits.

### **4.3 Social mobility and income differentials**

The aggregate findings presented above hide considerable differences among the situations of individual households. As a first approximation, this is revealed if the sample is assessed by income strata over time (Table 2). The 1976 income distribution is divided at the poverty line in 1976 of Rs67 per capita per month and at a point approximately 40 per cent below the poverty line (Rs38). Of the cohort of 390, roughly the lowest quartile (23 per cent) was in the poorest group, the remainder being divided almost equally between the middle and the upper groups. For 1988 the same dividing lines are used, adjusted for inflation. The matrix in Table 2 shows that 41 per cent of the 377 households, for whom the data are complete, changed strata to their advantage, while 16 per cent moved to their disadvantage. From the point of view of concern for poverty during this period of relative prosperity, 4 per cent households became virtually destitute by 1988 after starting above the lowest group in 1976. On the positive side, as many as 12 per cent managed to rise from the depths of poverty in 1976 to be above the poverty line in 1988.

Two reflections may be made here. Firstly, it is clear that the urban poor cannot be confident of a steady and stable growth in their incomes. Many households experience cycles of adequate survival followed by considerable distress, even within the local context of vibrant economic growth. Secondly, one can understand the preference of the poor to acquire an occupation in which they are protected from serious income erosion and from which remuneration is sufficiently high to cushion the household against job losses or other contingencies befalling household members. The same point has been made in a study of the labour market in Jakarta (Evers, 1989), where it was observed that "strategies for the allocation of their major asset,

labour power, seem mainly to be directed at reducing.... insecurity. Maximisation of income is only one strategy among many”, and “access to wage labour remains the major avenue to assuring the satisfaction of basic needs and pulling the household across the poverty threshold.”

From the Pune data there is no doubt that there was income security provided by enumerated-sector jobs for those who could access and maintain them. But the question of job security is more complex. During the difficult years of 1976 to 1980, there were job losses among enumerated-sector workers in Pune (not just the casual wage labourers). Over half of the households which had an enumerated-sector worker in 1976 suffered loss without replacement by 1980. This was also the case in a fifth of the industrial-worker households.

A further dimension of the question of polarizing growth is the distinction between the settlements themselves. The settlement which housed victims of drought and represented, in a sense, a collective experience of migration under duress was, at the time of the first survey, among the poorest (by various criteria). Another settlement, by contrast, had households resident in the city for much longer, substantially engaged in organized-sector work and was clearly the best-off of the sample settlements. A striking observation is that by 1988 there was virtually no difference in per capita incomes between these two settlements. A closer examination of the poorest settlement indicates that many of the new generation of workers had acquired skills (primarily in the traditional occupations through apprenticeship on the job) that gave them earnings higher than their fathers. This could raise total household income substantially, but per capita income would be determined by the number of dependants.

**Table 2: Income distribution of 1988 sample households in 1980 and 1988, according to income in 1976**

	Per capita income, 1976			
	Rs0-38	Rs38(+)-67	Above Rs67	Total
<b>Per capita income 1980</b>				
Rs0-49	47 (54.7%)	33 (22.2%)	15 (10.5%)	95 (25.1%)
Rs50-89	29 (33.7%)	92 (61.7%)	39 (27.3%)	160 (42.3%)
Rs90 and above	10 (11.6%)	24 (16.1%)	89 (62.2%)	123 (32.6%)
<i>Total</i>	86 (100.0%)	149 (100.0%)	143 (100.0%)	378 (100.0%)
<b>Per capita income 1988</b>				
Rs0-109	7 (8.1%)	11 (7.4%)	5 (3.5%)	23 (6.1%)
Rs110-195	34 (39.6%)	61 (40.9%)	46 (32.4%)	141 (37.4%)
Rs196 and above	45 (52.3%)	77 (51.7%)	91 (64.1%)	213 (56.5%)
<i>Total</i>	86 (100.0%)	149 (100.0%)	142 (100.0%)	377 (100.0%)

Note: The three groups preserve the same real per capita income in 1988 as in 1980 and 1976, updated for increased cost of living.

Possibly there were two quite different processes at work here that would explain the position of better-off households. There was one class of households whose members were engaged in moderately well remunerated casual or miscellaneous labouring jobs (not the poorest occupations), whose labour input was average but whose family unit was small (mainly with fewer than five members), meaning there was low dependency. Their relative prosperity, being related to their family life cycle, could prove to be short-lived. On the other hand, there was a class of households whose members were permanent organized-sector workers or low-skill professionals which were both well-remunerated groups of occupations. Their labour input was average and so was their family unit (mainly five or a little above). Were it not for their position in the core industrial proletariat they would be poor.

To assess this any further would require more detailed information about the households concerned. Since this is not available in the datasets, it is possible only to sketch some reconstructions from the quantitative data collected. For example, there were cases in the poorest settlement of recent arrivals in the city where sons and other members had moved out of the sample households between 1976 and 1988, taking the pressure off the extremely restricted space in their dwellings. This accounted for the smaller household size. In some cases this gave relief as their young children would not require support from the limited household resources, and consequently the per capita income was higher.

In the better-off and well established settlement, on the other hand, larger household size indicated that a second generation was also living under the same roof. In some cases a mezzanine or a second storey had been added to the original dwelling to accommodate the larger number of members. It was the high levels of earnings of at least one member that had maintained household income. Thus, although the per capita incomes in the two cases were similar, circumstances of the households in the two settlements were quite different. This underscores the importance of looking at households throughout their life cycle to get a clearer picture of their economic situation.

#### **4.4 Vulnerability of households**

The longitudinal study of slum settlements in Pune illustrates the vulnerability of poor households. Over the 12-year period half of the households that started off as poor improved their incomes sufficiently to cross the poverty line. At the same time, of the households above the poverty line in 1976, as many as a third had fallen below it by 1988. This illustrates their precarious economic situation. In other words, the income gains that some households achieved may not have been sustainable subsequently. Besides, increase in per capita incomes related to family life cycle might prove short-lived. This imposes a serious limitation on these households' ability to create assets that might help them to survive difficult periods.

Clearly, no household at these levels of relative poverty could be confident of continued survival without further struggle. Although the account of the fortunes of some of these households may read like a success story, one also has to remember the multi-level forces stacked against the poor, and the fragility of the conditions in which they live. Consideration of income-poverty alone cannot capture this vulnerability, especially of those whose per capita income hovers around the poverty line. Unless the precariousness of their situation and vicissitudes in their livelihoods are also taken into account, use of the conventional poverty line is unlikely to describe the lives of this group with accuracy.

## **5 Living conditions and health**

### **5.1 Poverty and unhygienic living conditions**

The challenge of alleviating poverty and improving living conditions is both “structural” and “contingent”. It is rooted in the realities of urbanization and slow economic growth, and is contingent on the position, diagnosis and response of public policy, and public-sector action and intervention. Since India gained independence in 1947, the political rhetoric has been in favour of growth and social justice. The data regarding performance, however, show that poverty and inequality have remained deeply entrenched. Consequently, the number of people living in slums has increased rapidly and the promise of improved living conditions for all has remained unfulfilled.

Assessed in terms of the historical development of Pune, the question of unhealthy living conditions of the low-income population is not a new issue (Bapat, 1981). In the indigenous town, social and economic stratification and physical segregation were well established before the colonial era superimposed political, spatial and infrastructural hierarchic divisions. While the indigenous pattern of development relegated the socially underprivileged to less desirable areas away from the main town, the British as a ruling power built the Cantonments to suit the requirements of the colonial elite. More recent attempts to enforce town planning and building regulations, albeit designed to create a “healthy” environment, have, in fact, further exacerbated the polarization of living conditions between rich and poor. In the absence of public-sector intervention to create access to decent housing for those unable to compete in the land and housing markets, the low-income population remains left with unauthorized settlements in squalid and unsanitary conditions.

### **5.2 Unaffordable housing and worsening living conditions**

To help assess housing conditions in Pune, four socioeconomic surveys are available. The first of these was conducted in 1937 (Gadgil, 1952), just before the population of the city started to increase rapidly. The next survey was undertaken in 1954 (Sovani et al., 1956) after nearly a decade of relatively rapid growth. The survey conducted in 1967 (Poona Metropolitan Regional Planning Board, 1970) shows the situation after a quarter of a century of industrial growth in and around the city. The last survey, conducted in 1998 (Department of Politics and Public Administration, University of Pune, 2001) provides information on living conditions in the city that has grown to be a metropolis.<sup>7</sup>

The 1937 survey notes that “considerable members even in low income categories owned houses. To a large extent this represented the continued ownership, chiefly by succession, of older elements of small low quality housing. In the twenties and thirties it was already becoming increasingly difficult for people in lower income categories to think of building houses for themselves or acquiring them.” In subsequent years this difficulty continued, and those in even the middle-income categories could no longer contemplate the possibility of owning a house in

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<sup>7</sup> The results of these surveys are not directly comparable. The 1937 survey covers the area under the jurisdiction of Poona Municipality and Suburban Municipality; the 1954 survey extends over the area of Poona Municipal Corporation (PMC) as set down in 1950 and Poona and Kirkee Cantonments; the 1967 survey is conducted within the extended limits of the PMC but leaves out the two Cantonments. Moreover, it deals with unauthorized settlements or slums separately, whereas the first two surveys include them in the blanket term ‘housing’. The results of the 1954 survey have, however, been presented in such a manner as to make them comparable to the corresponding findings of the 1937 survey. Further, the 1967 survey gives information about authorized housing; hence the results of the survey need to be interpreted in the light of the 11.6 per cent of the city population living in slums in 1968.

Poona. The survey shows that rental costs in the late 1930s were so high in relation to the incomes of the poor that a substantial proportion of the lower-income population was paying rents amounting to a fifth or even more of their total income.<sup>8</sup>

The 1937 survey also indicates the uneven nature of the supply of different types of housing. Building activity after World War I met mainly the needs of the rich and the middle classes, for instance. The conclusion from the findings of the survey is that while a large increase in the population<sup>9</sup> has created a demand for accommodation, especially among lower-income classes, “the supply of suitable accommodation at rentals within their capacity is limited. The result is a considerable worsening of housing conditions for these classes and an unduly high proportion of income that has to be paid as rent.” In subsequent years, the population increased rapidly and so did overcrowding. From 1941 to 1951, population grew by 70 per cent (Sovani et al., 1956). The available data show that the proportion of families living in extremely overcrowded conditions (defined as an area of less than 25 square feet per person) increased from 22.6 per cent in 1937 to 31 per cent in 1954.

After 1960 industries began to grow rapidly in and around Pune. The growth of the population from 1961 to 1971 was modest at 40 per cent (Bapat, 1981), but the housing situation worsened considerably. The 1967 survey gives a clear idea of the extent of congested, unsanitary and badly lit and ventilated housing in the city: “It is reported that 35.3 per cent of houses (tenements) in the city get poor natural light, 34.9 per cent get poor fresh air and 42.9 per cent have dirty and smelly surroundings while 40.7 per cent have poor sanitation.” The survey also notes that about half of the tenements do not have separate kitchens.

The 1967 survey defines extreme overcrowding as less than 20 square feet per person in the home. On this basis, 25.9 per cent of families living in (authorized) housing in Pune had to suffer extreme overcrowding. Another 33.3 per cent of families lived in housing with 21–40 square feet per person. Taking a proportion of the latter as a crude guide for comparability with the earlier surveys, around 37 per cent of families (in formal housing) had less than 25 square feet per person. This rises to more than 45 per cent of the total population with the inclusion of part of the 11.6 per cent of the population then living in illegal settlements or slums. Such settlements were mostly characterized by congested and low-quality dwellings (shacks), and an absence of basic facilities.

The Rent Control Act came into force in 1942, pegging the rents of (formal) residential accommodation at the 1940 level. Over the years, as people’s earnings increased, these rents did not necessarily form a significant proportion of household income. The quality of old housing deteriorated however, and yet the occupants continued to live in dilapidated, inadequately serviced buildings in overcrowded conditions so that they had a roof over their heads. This was primarily because the cost of newer housing (constructed post-1940) was beyond their reach. Many of the old properties are occupied even today, despite notices given to the residents by the local authority declaring the buildings to be dangerous and unsafe for occupation. Instances of house collapse resulting in loss of life and property, especially during the monsoon, are not uncommon. The problem is more acute in Mumbai (formerly called Bombay) where, despite the existence of the Building Repairs Board, many old buildings remain unsafe and are still occupied.

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<sup>8</sup> Subsequently in 1962 the Working Group constituted to define the poverty line suggested only 10 per cent subsidy for housing. Clearly, this was out of line with the reality.

<sup>9</sup> This ‘large’ increase in population was actually an increase of 30 per cent from 1931 to 1941 (Sovani et al., 1956).

The 1967 survey highlights the dramatic reduction in housing supply for the lower-income groups: “On the whole, considering the current cost of construction of even the cheapest house... a majority of families with monthly income up to Rs500 will have... such types of houses which would be only next to slums.” The key figures are those of family incomes. In 1967, 64 per cent of Pune households earned less than Rs250 per month and 25 per cent between Rs251 and Rs500. Thus in 1967, the survey notes, 89 per cent of the households in Pune earned less than Rs500 a month. The survey, therefore, concludes that in the face of a deteriorating housing situation and proliferation of slums, coupled with low incomes of a large majority, there is next to no possibility of most residents ever having an improved home. This sombre conclusion sets the tone for subsequent increases in the numbers and proportion of Pune residents living in slum conditions (Table 3).

**Table 3: Growth of the population living in slums in Pune, 1951–2001**

Year	1951	1968	1976	1998	2001
No. persons	36,725	92,100	274,000	-	1,050,000
Proportion of Pune's population (%)	7.2	11.6	23.3	37.9	38.9

#### Sources

1951 and 1968: Pune Municipal Corporation, *Report of Survey of Slums* (31.12.1968), Pune, 1969.

1976: Town planning and Valuation Department, Government of Maharashtra, *Draft development Plan of Pune (Revised)*, Pune 1982.

1998: Department of Politics and Public Administration, University of Pune, *Pune: From City to Metropolis, a Socio-economic Profile of Pune*, 2001 (Working Paper).

2001: Pune Municipal Corporation, *Environmental Status Report*, 2002–2003.

Comparing the household income necessary to afford decent authorized housing in Pune in 1967 (at least Rs500 per month) with the poverty-line income shows a wide gap between the two. The poverty lines (for urban India) as defined by the Working Group, and as defined by Dandekar and Rath, expressed in 1967 prices were Rs207.5 and Rs185.0 per household (of five members) per month respectively. (For urban Maharashtra, the poverty line as calculated by Dandekar and Rath was Rs256.5 per household per month in 1967.) Clearly, these poverty lines do not reflect the real living conditions of city residents in 1967.

In 1967, the income of 64 per cent of households in Pune was less than Rs250 a month. Measured by any of the above poverty lines, a substantial proportion of the city population must have been below the poverty line. And yet, in 1968 the population living in slums was only 11.6 per cent of the total (Table 3). In addition, a significant proportion of households residing in authorized but unhygienic accommodation in overcrowded conditions must have been below the poverty line. Over the years the population living in slums grew rapidly as access to authorized housing became unaffordable to an increasing proportion of the population. As shown by the longitudinal survey findings, a sizable number of slum households were above the conventional income-poverty line (see Table 2) but were living in a poor environment.

### 5.3 Cost of residing in illegal settlements

Denied access to authorized housing by both cost and location considerations, the low-income population of Pune established settlements outside the town planning framework. (There are now 564 slum settlements in the city.) The land that these settlements occupy is largely unsuitable or unattractive for real-estate development. It is often in unsafe locations such as on

steep hill slopes, in low-lying areas subject to flooding, on river banks which are often inundated during the monsoon, or on narrow strips of land along rail tracks. Despite the risks and inconvenience of these locations, the poor stay there to be close to places where they can find work. Another possibility for illegal occupation is provided by land reserved in the City Development Plan for public purposes and which remains vacant until it is acquired by the local authority. This process may take years or may not happen if encroachers manage to stay on without getting evicted. In the initial stages, there is no provision of basic services such as water supply and sanitation, and accessing these can be a challenge (as discussed below).

The Slum Areas Act passed in Maharashtra in 1971 allows for the provision of basic facilities in slums. After a settlement is notified or “recognized” as a slum under the Act (for details see Bapat, 1987b) the local authority provides communal facilities of water taps and latrines, open drains, paved pathways and street lighting. (The latest figures show that out of 564 slums in Pune 353 are “recognized” and as many as 211 settlements are not “recognized” as slums.) If the land occupied by “recognized” slums is needed for a public purpose, slum dwellers (who have a specified proof of residence in the slum from before a stipulated date) are relocated on sites which are invariably situated close to the city limits, where land is cheaper.

Being encroachments on vacant land, slums are never free from the threat of eviction. In Pune the local authority has conducted sporadic slum demolitions but the scale has not been large. (In a democracy it is not always politically tenable to conduct mass demolition drives.) There have also been a few instances of relocating slum families in order to free land for road-widening or other public purposes. An attempt by the local authority in the 1980s to remove several slums located on the slope of a hill (on top of which are historic temples) was foiled by the residents. The large slum-clearance and re-housing project involved removing a series of slum settlements located south of the inner city and providing new housing on the southern periphery. These slums are situated on the banks of a canal that brings water from the reservoir to the city. The slum dwellers have to use the canal water for washing and bathing as there is no other provision. The re-housing project was initiated ostensibly to protect the health of the city by removing the slums that pollute the city’s water supply. However, after a sustained protest by the slum residents, including hunger strikes, demonstration marches, representations to the authorities and filing a legal suite, the local authority eventually abandoned the plan to clear the slums (Bapat, 1987a and 1996).

Delhi, the capital of India, on the contrary, has seen large-scale relocation of slum dwellers to distant sites. A recent study has found that “Slum clearance for the redevelopment and beautification of the capital has often resulted in pushing further away the unwanted slums, without solving the issue of adequate shelter for the poor. Moreover, since slum demolitions entail the destruction of investments made by the poor for their housing and improving their micro-environment, they systematically impoverish the affected families. When demolitions are recurrent, they jeopardise the efforts of slum dwellers to improve their conditions, maintain them in a poverty trap and lead to a pauperisation process” (Dupont, 2008).

In Mumbai, too, there have been instances of large-scale slum clearance. A brutal demolition was carried out in 1997 in a suburb of Mumbai, clearing a large slum settlement spread over 40 hectares and housing 13,000 families (65,000 people). The first settlers came to this swampy area in the early 1970s. They filled up the marshy land and made it habitable. Over the years the settlement grew and became consolidated. In 1997, it was razed to the ground and the substantial and precious investment made by the residents in building their homes and businesses was turned to rubble. The people were rendered homeless and left to fend for themselves in the pouring rain (Habitat International, 1997). Later they were offered a relocation

site which was an inhospitable, uneven terrain without any facilities and far away from their settlement or indeed any habitation.

Nevertheless, slums have grown through illegal occupation of vacant land in many urban centres because, in the absence of affordable options, this is the only way in which low-income families can construct shelter for themselves.<sup>10</sup> If people manage to stay on without getting evicted they gradually upgrade their shelter. Findings of the longitudinal survey in Pune show that people improve their shelter over time, even on the basis of existing income levels and their own labour. The space in the dwelling is often restricted and the improvements modest, but people gradually increase the habitability of the shelter. Most dwellings, not being built of robust materials, require regular maintenance and repairs. An annually recurrent feature is pre-monsoon repairs to the roof. Whatever the quality of construction and space standards, slum dwellings usually represent years of substantial and precious investment of resources, time and labour.

Previously, it may have been possible to occupy vacant land illegally in Pune without making a monetary payment (and this may still be possible at remote or highly unsafe sites). This has changed over the years, as ubiquitous slums have become a “permanent” feature of the urban landscape. There is now an active housing market, even in slums, although the transactions involved do not have legal validity because of the unauthorized nature of land occupation and dwelling construction. For the same reasons, obtaining formal loans or mortgages is not an option open to the people. The price of housing is determined by the perceived security of tenure, the location of the settlement and the level of provision of basic infrastructure. Dwellings in more consolidated settlements command high prices as well as high rentals.

The official poverty line does not take into account the costs of living in unauthorized settlements. It is not possible to quantify some of these costs, such as the risks involved in staying at unsafe locations, insecurity owing to illegal occupation of land and inconvenience or hardships caused by inadequate access to basic facilities. These, however, are clear manifestations of the deprivation that a large proportion of the low-income population suffers. Consultations carried out with individuals living in “illegal/irregular” settlements in the state of Uttar Pradesh clearly voice people’s serious concerns about “very poor housing, lack of secure tenure (extremely important in the eyes of the urban poor), polluted and inadequate water and sanitation services” (Kozel and Parker, 2005). It is not the case that all slums face these difficulties, but a significant proportion does. Not recognizing this in defining the poverty line amounts to obscuring the reality.

#### **5.4 Inadequate provision of basic facilities and daily hardships**

The socioeconomic surveys of Pune mentioned above contain data on the provision of water supply and sanitation to city residents. They show that over the years the provision of piped water supply has improved considerably across the board (Table 4) even though a substantial proportion of the city’s population has not been able to access decent formal housing. By the end of the last century more than two-thirds of families in the city had independent water taps, compared to only a third in the mid-1950s. Compared with more than 12 per cent four decades ago, only about 1 per cent of the families had no access to water taps by 1998.

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<sup>10</sup> Slums are ‘tolerated’ because of the political economy of urban development, at the root of which is the distribution of the city’s resources – most importantly land (Bapat, 1990).



Having access to water taps, however, does not guarantee regular and reliable supply of water, and with adequate pressure. Although recent official data claim that residents of Pune get on an average 200 litres of water per day per person, these aggregate statistics conceal the reality of acute inequality in the distribution of water. A series of interviews conducted during 2002 and 2003 in a range of slum settlements in Pune and Mumbai gives some insights into the daily difficulties and hardships faced by many slum dwellers, especially women (Bapat and Agarwal, 2003).

A disproportionate share of the labour and burden of ill health related to inadequate water supply and sanitation falls on women. It is typically women who collect water from public standpipes, often queuing for long periods and having to get up very early or go late at night to fetch the water. It is typically women who have to carry heavy water containers over long distances and on slippery slopes. It is typically women who have to make do with inadequate supplies to clean the home, prepare food, wash utensils, do laundry and bathe children. It is also women who have to scrounge, fight, buy or beg for water, particularly when their usual sources run dry or when the water supply is turned off before their turn comes.

**Table 4: Distribution of families in Pune by access to water taps, 1954–1998 (%)**

Year	No water taps*	Shared	Independent	Inadequate information	Total
1954	12.27	50.68	32.96	4.09	100
1967♦ (formal housing)	17	40	43	-	100
1979	11	54	35	-	100
1998	1.10	31.6	67.3	-	100

#### Notes

\* Those with “no water taps” were obliged to use wells or canals for sources of water.

♦ The 11.6 per cent of the city’s population living in slums had very inadequate provision of water supply.

#### Sources

1954: Sovani et al, 1956.

1967: Poona Metropolitan Planning Board, *Regional Plan for Poona Metropolitan Region*, 1970.

1979: Town planning and Valuation Department, *Draft Development Plan of Pune* (Revised), 1982.

1998: Department of Politics and Public Administration, University of Pune, *Pune: From City to Metropolis, A Socio-economic Profile of Pune City*, 2001.

It is important to appreciate how humiliating, stressful and inconvenient it can be to have to rely on public or other people’s taps. Coping with irregular timings of water supply presents problems, especially for women who have to go out to work. Girls who should be at school are made to stay home to be able to collect water whenever it becomes available.<sup>11</sup> This is the situation in a city like Pune which is relatively well endowed with water, having more than adequate aggregate supply for all its residents. In urban centres with a shortage of water, the plight of slum dwellers is even worse.

<sup>11</sup> Being kept out of school has a cost in terms of losing out on future prospects (Satterthwaite, 2004). These are aspects of gender bias in addition to those pointed out by Saith (2005) mentioned above.

In Mumbai, some slum residents have to pay local strong men for accessing water, or buy it from vendors. At some locations the water pressure is so low that it can take hours to collect a small quantity; some women wait until late at night when the pressure improves somewhat. Women living along rail tracks have to cross railway lines to reach water taps. Crossing rail lines with heavy water containers on their heads is tricky and fraught with danger. Women who have young children are anxious that the children may follow them across rail lines without paying heed to approaching trains. These concerns make the daily chore of procuring water a dangerous and stressful task.

The available data on the provision of toilets in Pune (Table 5) show that the proportion of families with their own toilets increased somewhat between 1954 and 1979 (from 12 to 26%). Even in 1979, however, the majority of families (59%) had to use shared facilities, and a significant proportion (15%) had no access to a toilet. Recent data on the provision of toilets are not available. However, since 1999 the local authority has undertaken a large-scale programme of providing slum sanitation. More than 10,000 community toilets have been built, and this has improved access to sanitation in many slums in the city. However, insufficient supply of water, unsatisfactory cleaning, poor maintenance and unwillingness of users to pay service charges have already rendered several toilet blocks filthy and unusable. Many are in a bad state of repair with broken doors, choked toilets and stolen water taps.

**Table 5: Distribution of families in Pune by access to toilets, 1954–1979**

Year	No latrine *	Shared	Independent	Inadequate information	Total
1954	18.91	66.7	12.41	1.98	100
1967 ♦ (formal housing)	21	64	15	-	100
1979	15	59	26	-	100

#### Notes

\*Those with no latrines were obliged to use open ground for relieving themselves.

♦ The 11.6 per cent of the city's population that lived in slums mostly had no access to latrines.

#### Sources

1954: Sovani et.al, 1956.

1967: Poona Metropolitan Planning Board, *Regional Plan for Poona Metropolitan Region*, 1970.

1979: Town Planning and Valuation Department, *Draft Development Plan of Pune (Revised)*, 1982.

Not having access to latrines, or having to wait in long queues to use filthy latrines (where maggots crawl up on user's legs) carries with it health risks and is also a source of anxiety (Bapat and Agarwal, 2003). Women interviewed have mentioned their fear of getting molested when they go to a secluded place to relieve themselves. As a security measure, some resort to going in a group. Where there is no open space, roadsides are used for defecating. In such situations women try to wait for the cover of darkness or eat less so that they do not need to go in the daytime. In Mumbai, people residing next to railway tracks use the tracks as toilets, which carries the risk of getting hit by approaching trains. Such accidents are not uncommon.

Whether or not they are income-poor, slum dwellers face these worries, and lack of sanitation therefore robs people of basic human dignity. These are indirect costs that slum dwellers, especially women, have to pay to access basic facilities such as water and sanitation. Many of these costs are difficult to quantify as they are paid in terms of hardship, time, anxiety or ill health. It is not the case that all slum settlements are in such a situation, but a significant

proportion faces such predicaments. These facets of deprivation are, again, not reflected in official poverty lines, but they are a reality of the daily lives of the poor.

### **5.5 Physical environment and impairment of health**

City residents generally view slums with disgust. There is a stigma attached to living in ramshackle shacks surrounded by stagnant waste water and piles of rotting garbage, buzzing with flies. The Slum Areas Act defines a slum as “an area unfit for human habitation”. The indignity that slum dwellers face is best illustrated by the customary description of this “proliferation” as cancerous growth. The poor are often regarded as an undifferentiated mass living in a homogeneous deleterious environment. In reality, however, there are contrasts that may co-exist in the physical environment in which the poor live: between the slums that are reasonably serviced with communal water taps and latrines, and those where canals provide the water and road margins or hill slopes receive the waste; between the hutments in the ill-drained areas and those in well-aired suburbs; and between the settlements where the community organizes the sweeping and those where the drains remain blocked.

These wide differences in the living environments of the poor affect their health differently, as confirmed by the 1980 survey within the longitudinal study of slum settlements in Pune (Bapat and Crook, 1984; Bapat et al., 1989). The sample settlements are situated at different locations ranging from the inner city to the fringe area. The variety in the physical environment of these slums derives from three major features: level of facilities provided, standards of amenity maintenance, and the natural environment’s ability to absorb the wastes created by human habitation (in the absence of formal facilities). In order to perform statistical analysis, an index was constructed to take these three features into consideration.<sup>12</sup> This composite index provided several gradations of environmental quality in the seven sample settlements (Table 6). As a measure of health status, the survey sought information about the incidence of sickness experienced in each sample household over the previous fortnight. For an objective indicator of child health, the upper-arm circumference of children aged 1–5 years was used to assess their nutritional status.<sup>13</sup>

To analyse the data and to test for statistical significance, a number of the variables discussed above were compared with measures of morbidity (regression analysis). Socioeconomic variables (like income and literacy) were not found to be significant at the settlement level, but the environmental score was correlated with health; a measure of the proportion of dwellings reported as damp (in addition to the environmental score) strengthened the overall explanation of population sickness. The composite index of environmental quality was a better predictor of sickness incidence than were the components taken individually.

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<sup>12</sup> The index was composed of eight factors: (1) spaciousness or crowdedness; (2) access to fresh air; (3) dryness or dampness; (4) cleanliness (i.e. well swept with facilities well maintained); (5) population per water tap; (6) population per latrine; (7) water quality as measured from a sample (see below); (8) food quality measured similarly. Each factor was given a value of 0, 0.5, or 1.0 (from bad to good) and the values summed to obtain the environmental score. The best score in the sample was 7.0 and the worst 0.5.

Food and water samples from some of the surveyed households in each settlement were collected for bacteriological tests. The water-quality tests on samples obtained directly from a tap showed that the municipal water supply is adequately treated.

<sup>13</sup> This involved the standard arm-band measure. Measuring nutritional status is fraught with difficulty, but this procedure probably gives a reasonable index, which is all that is required here.

Analysis of the data for children below ten years of age showed that families with incomes above the poverty line did not have a lower probability of morbidity when the effect of the micro-environment (dampness of dwelling) was controlled for. The same result held when occupational characteristics were substituted for income. At settlement level, the simple correlation between the environmental score and children aged 1–5 that were both sick and malnourished (20 per cent of all children) was quite strong (65 per cent), and similar to that with children who were simply sick (62 per cent). However, the correlation between the environmental score and the proportion of children who were simply malnourished was not strong (5 per cent).

Taking all the evidence together, it can be argued that a significant proportion of malnourishment in these settlements has been precipitated by sickness that is due to the poor state of the physical environment where these children live (Bapat and Crook, 1984). In other words, nutrition among young children cannot be adequately improved in the midst of a degraded physical environment because of the interaction between sickness and malnutrition. Further analysis showed that the worst-off households were affected more adversely by the deleterious environment.

To enable sustained improvement in the health of poor communities studied, a range of inputs would be required simultaneously. For example, for the poorest households a reduction in morbidity would require both income and environmental improvements; for those less poor (though still below the poverty line) morbidity reduction would require environmental improvement significantly more than income increases. That is to say, even improved income cannot negate the effects of bad living conditions. The key and interdependent elements of the physical environment in which improvement is required to improve health were found to be provision of water and latrines, and also overcrowding, contamination and dampness. A selective intervention (or single-input project) that simply provided water taps or latrines would not effectively improve health significantly. Other aspects of the physical environment (e.g. proper drainage to remove dampness) would need to be addressed as well.

## **6 Slum and shelter improvement**

### **6.1 Limitations of the slum-improvement programme**

The longitudinal study indicates that nearly two-thirds of slum dwellers remained at their original site over the 12-year period (from 1976 to 1988). Despite income improvements over that period, most people were unable to move to a better home or environment. One reason for this is the uncertainty of sustainable increase in income over a period of time. The restricted access is also related to the lack of affordable housing. This in turn is linked to the larger issue of the political economy of urban development. Town planning is intended to ensure orderly development and hygienic living conditions for all. In practice, however, the processes of urban development are directed by market forces, particularly in the case of land and housing. This means that those who are too poor to compete in the land and housing markets have no option but to live in unauthorized settlements, initially without any services or facilities.

**Table 6: Demographic and environmental characteristics of surveyed settlements in Pune**

	Settlement number							Total
	1	2	3	4	5	6	7	
<b>Size of population surveyed</b>	452	756	330	276	508	212	188	2722
<b>Estimated total population</b>	4250	12000	5000	4000	9000	2150	1500	37900
<b>Average literacy rate (%)</b>	60	39	38	11	74	39 (average)	47	45 (above age 6)
<b>Population reported sick (%)</b>	21	12	31	25	16	4	11	17 (average)
<b>Under-6 children reported sick (%)</b>	53	30	51	61	50	8	10	42 (average)
<b>Over-1 and under-6 children malnourished (%)</b>	72	41	60	50	42	42	24	45 (average)
<b>Persons per water tap</b>	106	270	833	1000	286	1111	17	-
<b>Persons per latrine</b>	80	109	No latrine	No latrine	125	526	13	-
<b>Water and food samples contaminated (%)</b>	59	83	73	79	44	63	60	-
<b>(Number of samples)</b>	(22)	(23)	(22)	(19)	(16)	(8)	(10)	-
<b>Environmental score</b>	4.0	3.5	1.0	0.5	7.0	5.0	7.0	-

**Notes:**

- Settlement 1: Inner-city settlement, long-term settlers, low-to-moderate incomes; water taps and latrines provided but not properly functioning or used.
- Settlement 2: Old settlement next to a stream (now a drain) in the south-eastern part of the inner city, rapid growth after late 1960s following arrival of drought victims, mostly unskilled labourers or petty traders; water taps and latrines provided but provision inadequate and badly maintained.
- Settlement 3: Located south-west of the inner city on a hill slope next to a canal, originated in the mid-1960s, migrants largely drought victims, mainly unskilled daily wage earners with very low incomes; very few water taps provided, many use untreated canal water, no latrines, road margins and canal banks used for defecation.
- Settlement 4: Located further west of Settlement 3 next to the canal, very recent migrants, drought victims, poor rag-pickers and unskilled labourers; environmental conditions similar to Settlement 3.
- Settlement 5: Situated in the north-eastern suburb, settlement recent but long-term Pune residents, relatively high literacy rate, large component of reasonably paid industrial and formal-sector workers; adequate provision of water taps, latrines and drainage, facilities well maintained as a result of community vigilance.
- Settlement 6: Located near north-east city limits, low incomes and literacy, only two water taps and few latrines, open land around used for defecation.
- Settlement 7: Residents from various slums in the city relocated on this official site close to the southern boundary; spacious layout, concrete bases for house construction and adequate facilities provided; low literacy but moderate incomes.

In recognition of this situation the government in the early 1970s launched a programme for environmental improvements of slums to provide communal water taps and latrines, open drains, paved pathways and street lighting (for details see Bapat, 1987b). The Pune settlements surveyed were improved under this programme, some of them after the 1980 survey. And yet, sanitation has not improved substantially because the services are not provided on an adequate scale, nor are they maintained properly. Furthermore, there is no provision in the slum-improvement programme for decongesting the densely built and highly overcrowded

settlements. As a result, even the limited programme objective of providing slum residents with a less squalid and unhygienic living environment is rarely achieved.

## **6.2 Slow progress of shelter improvement**

The resurvey of 1988 showed that most of the individual dwellings had been improved perceptibly. The fourth survey in 2003 in two of these settlements, 15 years after the previous survey, showed further consolidation. In the better-off settlement the houses had been upgraded noticeably and most had become permanent structures. Half of them had a reinforced concrete roof. Since the houses had been built close together, expansion was possible only vertically. More than 35 per cent of the houses had one or more storeys added, and another third had a mezzanine. Nearly 40 per cent of the houses had a toilet inside the house and 60 per cent had individual water connections. All the houses had individual electricity meters.

With improved housing, however, crowding too has increased. In 1976, there was an average of 4.4 persons per room; in 1988 this had increased to 7.4. In 2003 the situation had eased slightly as some of the members moved out, leaving an average 6.7 persons per room. The absence of any affordable alternative has forced the expanding households to crowd into the available small space. They have been able to improve the quality of their houses and acquire better facilities over time, but space remains a severe constraint.

In this settlement at least, several factors included in the composite environmental index had improved markedly by 2003. There was much less pressure on communal facilities as a large proportion of the households had private provision. And the community was careful to keep the environment clean. It must be acknowledged, however, that not many slum settlements in the city enjoy such improvements in the level of service provision and physical environment.

In the worse-off settlement surveyed in 2003, house improvements were less striking. Most of the houses, however, had become semi-permanent structures. Nearly a fifth of the dwellings had a mezzanine added. Only 3 per cent of households had individual toilets. All other residents used communal latrines. Nearly 20 per cent had individual electricity connections. Even though some families had added space by constructing a mezzanine, the number of persons in the household had also increased. In 1976 there were on an average 4.5 persons per room; this number went up to 5.2 in 1988 and 5.5 in 2003.

Compared to their situation in 1976, there was perceptible improvement in individual dwellings. The small shacks built using bamboo and plastic sheets or gunny sacks, which did not allow even standing room, had become much-improved structures. The local authority had provided communal water taps and latrines. Yet this settlement of densely constructed houses built along very narrow alleys continued to have less than adequate provision of basic facilities. Close to three decades after these families put up their shacks on this site, the physical environment in which they lived had not changed significantly. This is the situation prevailing in a large number of slum settlements. More than a third of the settlements in Pune are not even “recognized” as slums, and this notification is a prerequisite under the Slum Areas Act for the provision of basic facilities.

These two settlements perhaps represent the range of environmental conditions that exist in “improved” slums in Pune. One significant difference between the two is the level of community participation in maintaining the facilities provided. Clearly, individual private action to mitigate deleterious environmental effects is not sufficient. Collective action becomes necessary as well, for the environment is an asset towards which one individual alone can contribute very little, for

good or bad. A crucial provision of basic services can be made by the local authority but this alone does not necessarily result in a cleaner environment if not properly maintained.

The third settlement surveyed 2003, and for the first time, accommodates a majority of households who migrated to Pune after 1976 and some who have been resident in the city for much longer. The dwellings are mostly tin sheds, with few amenities inside. As the settlement was established recently, the families have yet to consolidate their homes. With low and unstable incomes this will be a long process, as demonstrated by the experience of the other slums surveyed. It is also likely that the improvements will be limited to rudimentary upgrading of shelter and, if the local authority undertakes slum improvement, provision of communal services.

### **6.3 The physical environment, health and the poverty line**

As noted above, gradual improvements in private incomes do not enable people to protect themselves from polluted surroundings. Heavily faecally contaminated soil is always likely to be ingested by small children, whatever the level of their family income. And a badly drained or poorly ventilated environment will exacerbate the condition of those who fall sick, whatever their access to curative treatment – and dampness may additionally encourage the growth of harmful micro-organisms. Ill health of a family member can mean added expenses of medical bills, and reduced income if work days are lost. Malnutrition among young children can have long-term debilitating impact on their health.

Analysis of the longitudinal survey results in Pune slums has shown that the opportunities for these households to escape from their deleterious physical environments are very limited. In the resurvey in 1988, 64 per cent households from the original sample in 1976 still remained at the same site. Those households that no longer remained in the sample because they had moved or been moved elsewhere were found in each previous survey to have an income distribution not dissimilar to those that remained. The workforce members in the households that moved out after 1980 consisted (in 1980) of a lower proportion of the factory and organized-sector workers than those who remained in the sample. It is, therefore, inconceivable that they moved into housing with adequate sanitary facilities. Fluctuations in the household income of the poor over time and the very small proportion in the sample that had secure employment, together with lack of sufficient assets, make it impossible for most households to obtain the loans that would be needed to gain access to housing of adequate quality. The problem has been further aggravated by the rapid increase in the price of property in recent years. Hence, despite the moderate income increases that many achieved, most slum households remain trapped in their current environments.

At the same time, there have been small improvements in the availability of sanitary facilities (especially where none existed before 1980), but very little has changed in the quality of maintenance. The general physical environment remains squalid and congested. Housing densities can be seen to have worsened, although individual dwellings have been improved in material construction. Taking all these observations into account, it is clear that there is no end in sight to the environmental deprivation of the poor in Pune.

The official poverty line as used in India does not take into account this multiple deprivation and the consequent costs the poor have to bear in terms of uncertainty, anxiety, ill health, stress, hardships and inconvenience. Focusing only on income-poverty overlooks the possibilities of adopting measures that could not only alleviate the situation and bring relief to the poor but also help them avoid poverty. For instance, even in the present circumstances, improving the conditions in the environmentally worst slums (Table 6, environmental score 0.5 or 1.0) to the level found in the better slums (environmental score 7.0) could considerably reduce the

incidence of sickness among residents and malnutrition among children. This would go some way towards helping the households avoid income-poverty and would also relieve some of the stress and indignity, and save time<sup>14</sup> and physical effort.

Improving environmental conditions in slums however, requires not only the provision of basic facilities on an adequate scale,<sup>15</sup> but also people's participation and vigilance in maintaining the facilities provided. Recent experience of the slum sanitation programme in Mumbai shows that to devise a workable arrangement for community management of facilities requires a committed effort. It needs application of strategies to build capacity among residents as well as to organize communities to counter vested interests that appropriate the facilities provided (Taru and WEDC, 2005).

The argument for broadening the definition of the poverty line to include the quality of the environment in which slum dwellers live because of its linkage with health is distinct from that advanced in favour of including household expenditure on curative health services (Mahendra Dev and Ravi, 2008). These are two different dimensions of health. Health problems are increasingly coming to be recognized as one of the prime causes of the slide into poverty (Saith, 2005; Krishna, 2003). The importance of affordable healthcare in preventing impoverishment is emphasized by a study in rural Rajasthan (Krishna, 2003) which found that falling into poverty is associated not with any single cause but usually with a combination of causes including high costs of healthcare. (Other important causes, in that region at least, include large expenses related to funerals and weddings, and high-interest loans from private sources to meet these often crippling expenses.<sup>16</sup>)

While expenses related to healthcare continue to be ignored in defining the poverty line, the question of shelter is not totally overlooked in the official definition. The Government of Maharashtra, for instance, has designed a detailed questionnaire to identify families that are below the poverty line (BPL). This includes information on:

- education, occupation, income of family members;
- other sources of income;
- quality of housing and availability of water supply, toilets, electricity;
- consumer durables owned by the family;

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<sup>14</sup> Satterthwaite (2004) points out that conventional poverty lines do not place a price on 'time', and mentions various studies that show how the poor 'pay' with longer time (for travel or queuing) or extra physical effort.

<sup>15</sup> This is not easy in all cases. The ownership of the land on which slums are situated determines whether or not basic services can be provided. In addition, high densities in such settlements leave very limited space for constructing toilets. Difficult terrain such as steep slopes can prove challenging for laying down services. In the case of hazardous locations, relocating the slum dwellers can be the only answer.

<sup>16</sup> The author mentions that some caste groups in the villages studied have already abjured death feasts and it is possible that continuing hardships will force other caste groups to rethink the necessity of such ceremonies. In Maharashtra too these social customs exist. It is very difficult to change them and government can play only a limited role in effecting change. However, there are social reform efforts by voluntary groups that, for instance, organize mass weddings so that expenses per family are minimized. Their reach, however, is negligible.



- standard of living of the family
  - head of household – whether male or female
  - education of children (attending private or state-run school, or not in school or working)
  - number of items of clothing per person
  - food consumption (less than one square meal a day or one or two square meals a day round the year)
  - expenditure on food
  - expenditure on tobacco and alcoholic beverages.

In Pune the Urban Community Development cell of the Pune Municipal Corporation (PMC) conducted a door-to-door survey in all the slums in 2005 and collected information from those families who had proof of residence in the slum since before 1995. In addition, families living in authorized housing in poorer areas of the city that made a declaration about their BPL income were also surveyed. Based on all this information, the PMC identified BPL families i.e. those earning less than Rs591.75 (approximately US\$13) per capita per month. Previously, in 2004 the poverty-line income was Rs419.98 per capita per month,<sup>17</sup> and the increase in the poverty line income has more than compensated for the rise in the cost of living. However, it is unclear how the information collected with the government questionnaire is used in determining the economic status of the family.

The PMC identified only 10,800 families in Pune as being below the poverty line in 2005.<sup>18</sup> In other words, given a majority of nearly 220,000 families living in abysmal conditions in slums in that year, fewer than 5 per cent of them were identified as poor. The cut-off date of 1995 for residence in slums may, of course, have excluded some of these families. Of the total population of Pune, therefore, the incidence of poverty is officially measured as less than 2 per cent. (This figure has not been updated since 2005.) In contrast, the urban population below the poverty line in Maharashtra is found to be 32.2 per cent (Table 7).

The official number of families in Pune living below the poverty line was arrived at after a detailed survey which included several criteria other than food consumption designed to capture the existing deprivation. The data could have been used to pinpoint the exact nature of deprivation at different locations in the city, so that relevant measures could be adopted to address it. Instead, the official survey had the limited objective of identifying (a minimum number of) families that would benefit from welfare measures initiated by the government, especially the urban employment scheme that gives support for vocational training and self-employment.

In this context, analysts have pointed out that “there is surprisingly little consideration of the data needed to support local action or of the potential role of local authorities or other local bodies in contributing to a better understanding of poverty and more effective actions to reduce it” (Montgomery et al., 2003, cited in Satterthwaite, 2004). Clearly, the data collection in deprived areas in Pune was not backed by this broader vision. However, while the local authority can determine measures to tackle some aspects of deprivation, many policy decisions need to be made at higher levels of government to alleviate poverty and deprivation effectively.

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<sup>17</sup> In addition to the per capita income, other criteria were: (1) not owning a *pucca* house (one built from sturdy materials); and (2) not owning a telephone, refrigerator or motorized vehicle. Based on these criteria there were 14,690 families in Pune who were below the poverty line.

<sup>18</sup> Information on the survey was obtained from A.V. Kalamkar, Joint Municipal Commissioner, Urban Community Development Cell, Pune Municipal Corporation.

**Table 7: Rural and urban populations below the poverty line in Maharashtra and India, 2004/05 (%)**

	Maharashtra	India
<b>Rural</b>	29.6	28.3
<b>Urban</b>	32.2	25.7
<b>Total</b>	30.7	27.5

Source: Maharashtra Economic Development Council, *Economic Escort to Maharashtra – A Statistical Profile*, August 2008, Mumbai.

On the basis of the discussion so far, the necessary components of the poverty line, and shortcomings in the conventional methodology, can be summarised as shown in Table 8.

**Table 8: Comparison of the components of different poverty lines**

Characteristics	Poverty line			
	Working Committee (1960/61 prices)	Dandekar and Rath (1960/61 prices)	Planning Commission (1973/74 prices)	Current poverty line (2004/05 prices)
Poverty-line level, rural	Rs0.66/c/day	Rs0.49/c/day	Rs1.63/c/day	Rs11.9/c/day
Poverty-line level, urban	Rs0.83/c/day	Rs0.74/c/day	Rs1.90/c/day	Rs17.95/c/day
Provision for shelter	Yes	Yes, to the level needed to attain consumption of defined minimum calories		
Provision for fuel	Yes			
Provision for transport	No	No	No	No
Adjustment for regional variation in prices (by states)	No	Yes	Yes	Yes
Adjustment for variation in minimum consumption basket (by states)	No	No	No	No
Provision for periodic revision of minimum consumption basket	No	No	No	No
Provision for healthcare and education costs	Assumed that state would provide (free of cost)	No	No	No
Provision for security of tenure (land and housing)	No	No	No	No
Provision for adequate access to schools	No	No	No	No
Provision for adequate access to healthcare facilities	No	No	No	No
Provision for asset base that can help tide over difficult times	No	No	No	No
Provision for safe and adequate access to water	No	No	No	No
Provision for safe and adequate access to sanitation	No	No	No	No
Indicator for viciitudes in livelihoods	No	No	No	No

## 7 Concluding thoughts

The narrow approach of the income-poverty line overlooks the multifaceted nature of human deprivation. “This can easily lead to a superficial and misleading understanding of the nature and causes, as well as the cures of human poverty. The grave danger posed by the income-poverty line approach is that it inevitably leads to a misidentification of the poor, and subsequently to the adoption of targeting, monitoring and evaluation criteria which are equally narrow, thus carrying the many blind spots in the concept of deprivation into the operational phase of interventions” (Saith, 2005).

Another area of concern is the emphasis on growth as a prime mover of poverty alleviation. Thus, discussions of poverty reduction are subsumed mostly under discussions of strategies for faster growth. “We do not know much about the conditions when growth will and when it won't trickle down to benefit poor people.... ‘Poverty’ does not get reduced *because* growth occurs.... Poverty gets reduced when more households and individuals do the things and take the pathways that lead out of poverty, and fewer individuals take the other pathways that lead into poverty” (emphasis in the original) (Krishna, 2003).

These are important observations which are also borne out by the analysis of the longitudinal study in Pune. The data show that over a substantial period of time there is only very limited upward mobility in the labour market. This indicates the quite strictly segmented nature of the Indian labour market (also see Deshpande, 1985; and Joshi and Joshi, 1976). Increased participation of family members takes place as a result of an erosion of income earned by the main breadwinner (both due to inflation and due to increased dependency). Women are effectively a reserve labour force for the family under economic pressure (an idea put forward by Banerji, 1981).

The Pune study indicates that faster growth of new jobs in a labour market does not guarantee that all participants in the labour market will have equal or any access to them. These points have been established with greater clarity by the longitudinal study over 12 years (whereas previous empirical work relied on retrospective reporting). Also, the Pune study makes the household as the unit of analysis, which is essential to explain adequately the individual responses to changes in the value of earnings. This is especially important in the context of very low incomes and limited occupational mobility.

The earlier period covered by the surveys, from 1976 to 1980, saw low-income slum-dwelling households struggling in the aftermath of an agricultural crisis and a severely fluctuating rate of inflation (Bapat and Crook, 1992). These conditions seemed to allow them no opportunity to see their incomes grow; indeed increased participation in the labour market was sought, particularly by women, in order to prevent a decline in standard of living. Women mostly had to take up onerous occupations at very poor rates of remuneration (lower than for men) since the consequences of a fall in living standards would have been severe, as two-thirds of the households were living below the poverty line.

During the later period, from 1980 to 1988, these households were able to participate in the growth of the local economy, and their incomes increased. At the end of this period the proportion below the poverty line had reduced to a little above 43 per cent. However, this statistic disguises the fact that a significant number of households experienced a decline in income to fall below the poverty line over the 12-year period. This illustrates the precarious nature of households' economic situation. Use of the conventional poverty line does not capture

these vicissitudes in poor people's livelihoods. As a result, the struggle of the poor for survival and their strategies to survive difficult situations go unrecognized. Gaining a better understanding of these processes is necessary for designing measures that can help poor people to deal with poverty more effectively.

During the 12 years of the survey, the sample households matured, their workforce became older, and their knowledge of the local labour market may have improved. By 2003, 15 years later, two of the seven settlements that were surveyed for the fourth time showed only slight changes in their occupational distribution: there was a small decline in the proportion of workers in secure employment and also in wholly unskilled and unorganized-sector work. The settlement consisting of a large majority of post-1976 migrant households surveyed for the first time in 2003, however, had an occupational distribution marked largely by unskilled daily wage labour. It is, therefore, difficult to argue that the benefits of economic reforms and local industrial growth are beginning to trickle down, raising the standard of living of the poorest.

In this context, writing on capability deprivation, Amartya Sen (1999) observes that, while in many ways economic reforms have opened up economic opportunities for the Indian people, the reforms could be much more productive if the social facilities were there to support the economic opportunities for all sections of the community. He asserts that, in order to spread economic opportunities, they need to be accompanied by "an adequately supportive social background, including high levels of literacy, numeracy, and basic education; good general healthcare; completed land reforms and so on".

The longitudinal study in Pune further shows that the opportunities for the sample households to escape from their deleterious environments in slums are very limited. Lack of secure employment together with the lack of sufficient assets makes access impossible to housing of adequate quality. Hence, despite moderate increases achieved in income, these households are effectively trapped in degraded environments.

Housing for the low-income population in Pune is not a new problem. In the indigenous city development, the poor and socially underprivileged were relegated to inferior locations and low-quality housing. Surveys conducted after 1940 reveal that the proportion of the population living in overcrowded and unhygienic conditions has increased markedly, however. After the 1970s the deterioration in the housing situation was accompanied by a spectacular increase in the population living in illegal settlements or slums. Often situated at unsafe locations and on land largely unsuitable or unattractive for real-estate development, slums have provided shelter for a rapidly increasing proportion of low-income city residents.

These residents are aware that the absence of security of tenure carries with it the risk of eviction. Yet, on the basis of their low incomes, the poor gradually improve the quality of their dwellings. Though the progress of improvement is slow, it represents a precious investment made by the people of time, resources and labour. For the provision of basic facilities, however, they are dependent on the local authority. The Slum Areas Act is the legislation that facilitates the laying down of basic services in slums. However, the progress of slum improvement has been slow and results less than satisfactory. Inadequate access to basic facilities imposes costs on slum dwellers, especially women, in terms of time, hardship and anxiety. Having to procure water from other people's taps is humiliating and not having the privacy of a toilet is contrary to human decency.

As found by analysis of data from the longitudinal study, the state of the physical environment in which slum dwellers live was found to have an independent effect on morbidity, even when controlled for household per capita income or occupational structure. In other words, relatively higher income cannot offset the effect of living in a deleterious environment. To analyse the impact of the environment on health, a composite index was created from measures of crowding, provision of facilities and degree of contamination. A measure of dampness at the level of the individual dwelling was also used as an indicator of the micro-environment. The incidence of sickness and malnutrition in children was demonstrated to be higher when the quality of the environment was worse.

Obvious as it may seem, this conclusion needs to be emphasized because intra-urban differences in the quality of the environment in which the poor live are usually not appreciated. The findings presented in this paper show the causal link between the limited income increases that the poor can achieve over a considerable period of time, their precarious economic situation, inability to compete in the formal land and housing markets, risks, hardships and loss of dignity associated with living in illegal and inadequately serviced settlements, being trapped in unhygienic living conditions and consequent ill health and impact on poverty. These are some of the facets of deprivation that the poverty line, based only on the calorie-consumption norm, fails to consider.

In order to make a difference to the quality of life of the poor it is necessary to broaden the official definition of poverty, to identify facets of deprivation beyond the calorie norm and devise measures to alleviate them. This is especially important since, as the findings of the longitudinal study indicate, even in the context of buoyant growth in the local economy, there is no certainty that improvements in earnings of low-income households can be sustained over a period of time. Whatever income increases they can achieve are modest over a substantial period, and even households well above the poverty line have no escape from their degraded living conditions and consequent ill health.

To address these facets of deprivation it is necessary to understand poverty in its broader sense. The mainstream characterization of poverty, however, excludes any consideration of lived experiences of deprivation. Because these are not easy to quantify is no reason to disregard them. In this connection a fundamental question that Saith (2005) raises is whether there is sufficient “poverty” in the poverty-line approach – or is it a misleading methodology for finding out about poverty and the poor? This paper concurs with Saith’s answer that “poverty lines lie about the lives of the poor”.

A recent Indian government initiative indicates that there is some acknowledgement of the multifaceted deprivation faced by the urban poor and the need to create “legal space” for them. According to a news report, the housing and poverty alleviation ministry (Government of India) found that city master plans have neglected the needs of the informal sector which engages 92 per cent of the total workforce in towns and cities. The minister recently pointed out that “The urban poor suffer from double jeopardy. On one hand, master plans do not provide them legal space. On the other, spiralling prices have driven the urban poor out of the formal land market.... City plans must provide adequate space for the poor to live, work and sell.” The ministry has sent a directive to all state and city authorities to make “mandatory reservation” for economically weaker sections and low-income groups in all housing projects and has proposed to set up a National Urban Poor Fund (*Times of India*, 2008).

It is ironic that this new initiative comes on the heels of the repealing by the Government of India and most state governments of the Urban Land (Ceiling and Regulation) Act passed in 1976 with the specific objective of “preventing the concentration of urban land in the hands of a few persons and speculation and profiteering therein and with a view to bringing about an equitable distribution of land in urban agglomerations to sub-serve the common good”. Reviewing the progress of the implementation of the Act in the 11 years to 1987, the National Commission on Urbanization observed in its Interim Report that the Act had proved totally ineffective in acquiring surplus land and in curbing speculation and profiteering. It noted that the liberal use of clauses in the Act giving exemption from acquisition had ensured that large tracts of land never come under state ownership.

Landowners and real-estate developers had been demanding repeal of the Act for many years. Supporting the demand, the then Minister for Urban Development had argued at a seminar that the Act hindered the construction industry and restricted the supply of housing. He further added, “The Act needed to go not because of defective economics but because of the corruption it generated” (*Times of India*, 5 September 1998, Pune). It remains to be seen whether the new proposal is pre-election rhetoric or a policy measure that will be backed by political will to make its implementation effective.

Such doubts are justified because we have seen in the past that, for instance, a substantial proportion of the land reserved in the Development Plan of Pune (1987–2007) for public purposes (including housing for the poor) was gradually de-reserved over the period of plan’s implementation (Bapat, 2004) mostly in favour of residential use (i.e. real-estate development). This was also the case in Mumbai (formerly called Bombay). In a scathing article, former Secretary, Government of Maharashtra, writes that in Bombay the reservation of nearly 1 million square metres of land for various public purposes (including housing for low-income families) was deleted. The article further states that the government went about de-reserving land surreptitiously. It deleted reservations in a “covert, piecemeal manner pretending that these changes were not substantial”. The article concludes that the changes made by the state government in the process of finalizing the Plan were in no way related to the needs of the people at large (D’Souza, 1990).

To conclude, let us return to Dadabhai Naoroji’s definition of the poverty line. He defines the basket of required consumption as “what is necessary for bare wants of a human being, to keep him in ordinary good health and decency”. The key terms here are “good health” and “decency”. What he intended to include in these two facets when he wrote the definition in 1876 is very likely to be different from an understanding based on the above analysis. As interpreted in the present paper, this minimum standard includes legal shelter and decent living conditions, and adequate access to basic services. Measurement of poverty based on this definition will show a much larger proportion of the urban population as poor than that officially acknowledged at present.

The design of intervention for poverty alleviation that addresses these facets in addition to income-poverty will need to confront, among other issues, the political question of resource distribution in cities, especially land distribution. The possibility of this happening carries a question mark in the present era of privatization, liberalization and globalization. For, as noted by the mid-term appraisal of the Ninth Five Year Plan (1997–2002) (Planning Commission, Government of India, 2000), despite the stated commitment in official documents since the Second Five Year Plan (1956–61) to ensure access to housing by the poor, actual investments in this regard have been “niggardly and misdirected”. The appraisal further observes that land

use has largely been regulated by the markets or public authorities and both have mostly excluded the poor. Very little has changed since then on the ground.

In this connection, analysts have argued in favour of making poverty reduction rights-based. “The Supreme Court of India has proved to be an effective spur to public action by widening the interpretation of the fundamental right to life and liberty (Article 21 of the Constitution) to include the right to livelihood, the right to education, and the right to a healthy environment” (Challiah and Sudarshan, 2001). The Supreme Court, that broadened the meaning of the right to life to include livelihood, also argued that “the Constitution does not put an absolute embargo on the deprivation of life or personal liberty. By Article 21, such deprivation has to be according to procedure established by law. In the instant case (of pavement dwellers in Mumbai), the law which allows deprivation of the right conferred by Article 21 is the Bombay Municipal Corporation Act, 1888” and the relevant part of it which empowers the municipal authority to clear encroachments from pavements. The judgment goes on to state that those pavement dwellers recorded by the census in 1976 should be given, *not as a condition precedent to their removal*, alternative pitches at (a distant suburb of) Malavani (public interest litigation filed by Olga Tellis, Writ Petition No. 4601–4612 of 1981).

It is curious that, according to this judgment, state-level legislation provides a restraint on the fundamental right to life. What is even more remarkable is that the judgment does not think it fit to direct the local authority to rehabilitate the poor in a manner that will preserve their right to life but suggests offering them an alternative location on humanitarian grounds. While it accepts the argument that pavement dwellers live where they do to be close to their places of work for reasons of survival, it also suggests relocation to a distant suburb which would take them away from their places of work and jeopardize their livelihoods. The judgment represents a dilemma faced by the judiciary, and highlights a central contradiction in town planning (Bapat, 1990). Broadening the official definition of the poverty line to include dimensions of deprivation other than calorie consumption will draw attention to these issues, but will it compel the state to fulfil its obligation to address them as part of its intervention to reduce poverty?

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