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Dhārāvi: Developing Asia's Largest Slum (A)

"Can you believe it? This was our slum. We lived just there. Now it is business, apartments, call centers... India is at the center of the world...And I [pointing at the slum] am at the center of the center…"

— Quote from the motion picture, *Slumdog Millionaire*

Rance Hollen turned away from his screen in frustration. The Bombay Stock Exchange (BSE) Realty Index had just dropped another 200 points. As Hollen gazed out the window of Warwick Capital's 28th floor offices in London's Canary Wharf, he wondered if this was really the time for his fund to make its foray into India. Warwick Capital had a consortium of development partners counting on them to make the right call and, of course, the fund had its own equity on the line. Now Hollen had only a few days left to submit a final bid to the Government of Maharashtra to win the right to redevelop Mumbai's storied Dharavi slum.

The financing of the redevelopment hinged on unlocking and redistributing booming real estate wealth through more efficient land use and the use of private capital. Slum residents would get new apartments free of charge and developers would have latitude to make money on what was left over. The city would improve living standards for its citizens and obtain new privately-funded infrastructure.

Like other firms still competing for the project, Warwick and its local Indian partner had advanced through several rounds of selections based on qualifications. Now, in March 2009, all that mattered was cold, hard cash. Hollen had to make a decision regarding the bidder's premium, the amount of money the developer promised to pay the government per square foot of new construction sold into the open market. Hollen weighed the enormous economic and social opportunities of the project against the significant risks. As he began to review his options, three economic variables in particular weighed on his mind: the cost of construction, expected market prices, and the cost of capital.

The choice was critical to his company, and quite likely critical to Mumbai, to Maharashtra State, and to all of India as well. He considered the numbers and revisited the risk and reward issues around his decision: would Warwick meet the government's minimum "bidder's premium," submit a proposal well above the minimum, or elect not to compete?

Professor Lakshmi Iyer and Research Associate Namrata Arora of the HBS India Research Center prepared the original version of this case, "Dhārāvi: Developing Asia's Largest Slum," HBS No. 709-047, which is being replaced by this version prepared by Professor Lakshmi Iyer, Lecturer John Macomber, and Research Associate Namrata Arora. Many thanks to Andrew Pacelli (MBA 2009) for his contributions. Certain details are fictional or disguised for discussion purposes. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

A Public-Private Partnership for Slum Redevelopment

The Dharavi Redevelopment Project (DRP) was an ambitious plan to convert the neighborhood of Dharavi into a desirable residential and commercial enclave. The project, estimated to cost US$ 3 billion, was proposed to be a partnership between the government and private developers. With property prices in Mumbai among the highest in the world, the scheme was claimed to be profitable even after the current residents of Dharavi were provided free housing with better amenities and upgraded infrastructure in the same area.

When Hollen first started looking at the Dharavi project in 2007, real estate prices in Mumbai had soared over 300% in two years and planners forecasted continued growth.[1] Even with a little land there was a lot of money to be made. In 2009, however, prices were down 25%. Hollen had seen real estate cycles, but the Indian bubble that had captivated so many Western investors like Warwick was unprecedented. Was the deal still profitable in a weaker market? The slum redevelopment was expected to take 5-7 years. What if prices continued to fall? Under what conditions would the deal remain profitable?

On the government's side, Gautam Chatterjee, the officer in charge of the Dharavi Redevelopment Project (DRP), also wondered how to effectively fulfill the objectives of the project despite the challenges facing Asia's largest slum. Would the DRP successfully integrate Dharavi with the rest of the city? How could the project address the business interests of the current residents of Dharavi, most of whom worked in informal enterprises? Would the DRP be ecologically sustainable? In part to address these concerns, Chatterjee had convened an Expert Committee consisting of housing administrators, urban planners, and NGOs representing the interests of slum dwellers. A number of modifications had been made to the original plan and process, and this group remained highly influential.

The situation was further complicated by political and global factors. Elections were scheduled in 2009 for the state of Maharashtra, where Mumbai was located. Would the DRP continue to receive the political backing it needed if the ruling Congress Party lost and the opposition Shiv Sena party came to power? [2] Even in the face of these challenges, the success of the DRP was felt to be crucial not only for Mumbai's future as a modern city, but also for rethinking the entire approach towards slums in developing countries.

Dharavi: Asia's Largest Slum

The United Nations Human Settlement Program defined a slum as an area which had one or more of the following characteristics: inadequate access to safe water, inadequate access to sanitation, poor structural quality of housing, overcrowding and insecure residential status.[3] With 5.82 million (49%) of its residents living in its 2,000 slums, Mumbai had the largest absolute number and the largest proportion of slum dwellers in the world.[4] Dharavi was the largest slum in Mumbai, and by most estimates, the largest in Asia as well. The 2.23 square kilometers (551 acres) of Dharavi were home to 700,000 people, making it one of the most densely populated settlements in the world.

Dharavi traced its origins to the late eighteenth century, when local fishermen inhabited the swampy area near the Mahim river. Starting in the 1800s, Mumbai city began reclaiming land to accommodate its increasing population. The newly reclaimed land in Dharavi attracted many communities to settle informally, even though the government viewed the land as marshy and unfit for inhabitation. Migrants from all parts of India, including potters from the western state of Gujarat, clothing embroiderers from the northern state of Uttar Pradesh, and leather tanners from the southern state of Tamil Nadu, established colonies in Dharavi that served as both business and residential enclaves. In 2008, Dharavi contained a hundred distinct neighborhoods with residents from many regions of India, making it a "religious and cultural melting pot."[5] As the Mahim creek dried up, many residents of Dharavi turned to alternative sources of income such as brewing and bootlegging liquor, which invited illegal activities such as smuggling, prostitution and gambling into the area.[6]

Many homes served as both living and working quarters. Housing units in Dharavi were either part of a *chawl* or a slum settlement. *Chawls* were a large cluster of multi-storied, single-room homes with a common corridor and a communal toilet. Most *chawls* were built by the municipal government or by private corporations in the early 1900s to house the city's textile mill workers.[7] Slum structures, on the other hand, were illegal and unauthorized constructions built using raw materials such as tin scraps and plastic (see **Exhibit 1** for pictures of typical slum and *chawl* structures). A typical slum unit in Dharavi had two floors, each with an area of around 100 square feet. The lower level was the family's residential space while the upper "mezzanine" level served either as the family's production unit or was rented out to another family as additional source of income. There were also a few other buildings built as part of prior slum redevelopment schemes.

Cramped living conditions, coupled with the scarcity of clean water and unhygienic sanitation facilities, made Dharavi an extremely challenging place to live. There was also rampant pilferage of power, telephony and water lines. Only 17% of residents in Mumbai's slums had access to household toilets. Most people had to depend on public toilets, two-thirds of which were in various stages of disrepair and disuse.[8] A resident of Dharavi remarked, "If you have to go [to the toilet], you have to go to one toilet that everyone shares. You should see the lines...You go at 7, your turn will come at 10. In between you will see fighting over who came first-women, tearing each other's hair."[9] Dharavi was also home to a sizable middle class population who were unable to find affordable housing elsewhere. 85% of households in Dharavi owned a television set and 21% owned telephones, largely mirroring the consumption patterns of India's growing middle class.[10]

Dharavi was located in a commercially attractive area: 20 minutes from the airport, between the city's two main railways lines, close to two highways and adjacent to the Bandra Kurla Complex, one of Mumbai's most expensive commercial centers (see **Exhibit 2** for a map of Mumbai showing Dharavi's location, and **Exhibit 3** for a sectoral map of Dharavi). The Municipal Corporation of Greater Mumbai (MCGM) owned close to 70% of the land in Dharavi, while private landowners and the state government owned 20% and 10% respectively.[11] However, de facto ownership of land remained tenuous. Mukesh Mehta, an architect who had developed the sectoral approach for the Dharavi Redevelopment Project, explained, "For decades, thousands of people have migrated to Dharavi and have built homes on land that they don't own. Even though it is clear who originally owns the land, the slum units have been illegally bought and sold multiple times. This, combined with the fact that the population of Dharavi is so large and their political clout is so strong, means that exercising ownership rights has been virtually impossible."[12] Despite the lack of legal ownership, slum units were traded informally in Dharavi, with the price of slum structures peaking at Rs.7000[13] per square foot during India's real estate boom in 2007; these prices were considerably lower than the rate of Rs.12,000 per square foot in the neighboring Sion area.[14] **Exhibit 4** shows representative real estate prices in neighborhoods close to Dharavi.

Bidding for the Dharavi Redevelopment Project

In June 2007, Mumbai's Slum Rehabilitation Authority (SRA) invited Expressions of Interest from private sector developers for the Dharavi Redevelopment Project (DRP). Dharavi had been divided into five sectors, and developers were invited to bid for development rights each sector, covering an area of 144 hectares (355 acres) out of Dharavi's 223 hectares (551 acres). Approximately 40 million square feet of commercial space and 30 million square feet of residential development, both subsidized and for-sale units, were estimated to be created over a period of seven years. Developers were permitted to bid for more than one sector, but they would be awarded the contract for only one of the five sectors. Construction work for all five sectors was to start simultaneously. Developers had the responsibility to provide all infrastructural amenities such as roads, schools, hospitals and cultural centers; public services such as education or health services would be provided by the government or by non-profit organizations. Developers were required to maintain all the buildings and public areas for the first 15 years, with explicit criteria for maintenance activities such as repainting and waterproofing. The developer would also contribute Rs. 20,000 (approximately $400) per family into a fund to be used for further maintenance; the DRP would supplement this with an additional $400 per family.

The big incentives for real estate developers were the free-sale components i.e. the floor space they could build in addition to the slum rehabilitation component and then sell in the residential or commercial market. For every 100 square feet of free housing that was provided to slum residents, the builder was allowed to build and sell 133 square feet in the market for a profit. These free-sale components could be built only after the corresponding amount of slum rehabilitation housing had been built. This incentive would not only cover slum housing but also other kinds of residential, industrial, commercial properties provided by the developer. Builders were also given the option of using a floor space index (FSI) of as much as 4.0 for Dharavi, compared to an FSI of 3.1 for municipal land and 1.3 for private land.[a]

More than 100 developers responded to the government's initial invitation, and 26 real estate consortia submitted detailed Expressions of Interest (EoI) in early 2008. These were serious bidders, who had to pay $10,000 to submit the EoI application. If awarded the contract, developers would have to pay the SRA an average security deposit of $3.5 million per sector. These bids were to be evaluated by the SRA based on technical and financial criteria. Among other technical expectations, the bidding companies had to have completed at least one township development project with a minimum land area of 100 acres and built up area of 7 million square feet. Many developers were attracted to the DRP, despite having no prior experience in slum redevelopment projects. Ajay Gandhewar, Chief Architect for Neptune Developers, a developer shortlisted for the DRP, remarked, "We see the DRP as a vehicle for us to change the lives of a very large number of people."[15]

In terms of financial requirements, developers had to demonstrate a minimum financial capability, defined as liquid net worth plus unutilized borrowing capability, of around $105 million and an average annual turnover of $85 million. They were required to pay a minimum amount of $9 per square foot of the free-sale component area as a "premium" to the SRA. On award of the contract, builders would have to pay 10% of the premium in cash and 20% in the form of bank guarantees from an Indian bank; the remaining 70% would be paid once the free sale components were sold in the open market.

[a] The Floor Space Index (FSI), also known as the Floor Area Ratio (FAR), is the ratio of the total floor area of buildings on a certain location to the size of the land of that location.

Based on their submissions, 19 consortia were shortlisted by the SRA in April 2008 and invited to present their detailed redevelopment plans; several of these consortia had international partners. Many private builders were optimistic about the prospects that redeveloping Dharavi offered, estimating that property prices in Dharavi would be between 160 to 240 dollars per square foot. However, others remained uncertain about the prospects. Niranjan Hiranandani of Hiranandani Constructions remarked, "It involves a huge amount of money. There is a cost involved and then there are returns. We have to scrutinize the tender document before understanding whether the project is viable or not."[16] (See **Exhibit 5** for an illustrative analysis of the costs and returns involved in the project, and **Exhibit 6** for macroeconomic trends in India.)

After the initial invitation to developers in June 2007, the Dharavi Redevelopment Project underwent a number of modifications, as part of a process to incorporate the interests of several different stakeholders. This was part of a long process of change in the Mumbai government's approach to the city's extensive slums.

Slum Redevelopment in Mumbai: From Forced Eviction to Free Housing

The Mumbai city government's approach to dealing with slums had changed considerably over time. Initial programs which restricted building in slum areas and gave the municipal corporation the power to demolish slum structures had proved extremely unpopular. The Slum Improvement Program of the 1970s, which provided running water and sanitation facilities to slums, was unable to cope with the rapid growth of Mumbai's slums. In 1985, Prime Minister Rajiv Gandhi announced a billion rupee Prime Minister's Grant Project (PMGP) to improve housing conditions in Mumbai. Plans were formulated to build five-storey cooperative housing blocks in Dharavi. Due to delays in releasing the funds, the project made slow progress. There were also concerns that nearly a third of Dharavi's residents would be unable to afford the annual maintenance and civic amenities cost associated with the cooperative apartments, and hence would be forced to move out of the area.

A major turning point in slum policy occurred during the Maharashtra state elections of 1990, when the Shiv Sena party made a widely publicized campaign promise to provide free housing to the poor through slum redevelopment. Though the Congress party won the election, increasing political pressure compelled them to revisit slum redevelopment in Mumbai (see **Exhibit 7** for political trends in the state of Maharashtra). In 1991, private developers were invited to develop additional floor space on slum land by increasing the maximum allowable built-up area by more than 150 percent. This allowed the developer to sell floor space in the commercial market for a profit which would then cross-subsidize housing for the slum residents who would be provided housing at 23% of the estimated cost of construction.[17] The government also placed various restrictions on the developers, including capping profits at 25% of their investment. Partly as a result of this cap, the scheme received a tepid response from the private sector, and few homes were built in Mumbai's slums.

In 1995, as Mumbai was witnessing a boom in real estate prices, the Shiv Sena won the Maharashtra state elections and announced a new scheme to invite private participation in slum redevelopment. Families who had lived in slums prior to January 1995 would be allocated 225 square feet of free housing, all municipal property taxes would be waived for the first ten years and that developers would no longer be subject to the 25% cap on profits. Individual developers were to be chosen on a building-by-building basis through a 70% consensus vote by slum residents. The Slum Rehabilitation Authority (SRA) was established as the centralized, single-window government agency for all slum redevelopment projects.

Despite these incentives, progress in slum redevelopment remained limited. Many builders were accused of using pressure tactics on slum residents to agree to their redevelopment projects. Although SRA rules stipulated that redeveloped units could not be bought or sold for ten years, it became common practice for slum residents to sell their units to middle-class professionals; many of these sellers went back to living in slums next to the newly developed buildings.[18] By 1998, a fall in property prices had reduced developer interest in slum areas and left the government reassessing the viability of the existing slum redevelopment scheme.

A New Approach: The Dharavi Redevelopment Project

In 1997, Mukesh Mehta set up an office in Dharavi and began devising a redevelopment strategy for the area. Mehta had trained as an architect, and had developed and designed high-end homes for the U.S. market before returning to India in the 1990s. He realized that redevelopment in Dharavi was highly political: "One of the first lessons that I learnt in Dharavi was that because it was such a large vote bank, political parties often objected to any plan that they could not claim credit for."[19] Preserving political constituencies and aligning political interests was therefore crucial to any future redevelopment scheme.

Mehta proposed a sectoral approach to avoid the problems faced in previous redevelopment schemes. As in the currently existing policy, slum dwellers who had arrived before a cutoff date of January 1995 would obtain free housing of up to 225 square feet, later revised upward to 300 square feet with an option to purchase an additional 100 square feet at cost. Developers would be given the incentive of developing additional space for sale in the residential or commercial markets. The plan would not involve relocation of any households outside Dharavi, and very few people would be moved across the boundaries of political constituencies either.

Mehta's plan was different from the existing policy in two main ways. First, the focus was on the development of the entire area, not on building specific apartment blocks. Mehta's plan viewed the residents of Dharavi as a vital human resource to the economy of Mumbai and sought to eventually integrate the Dharavi community with the rest of the city. Dharavi would be divided into twelve sectors, each of which would have primary health care and education facilities. The developer would build high-quality roads, schools, hospitals, commercial centers, work spaces, industrial zones and cultural centers for the entire area. Once constructed, the schools, hospitals and other municipal areas would be run by the government or by charitable trusts. This would transform Dharavi into a desirable area to live for the middle class in Mumbai. It would also lower the incentives to move elsewhere, reduce quick resale of homes and help maintain a commitment towards building a community. This holistic approach promised to avoid uneven development. Organizations such as PROUD, a community based people's federation of more than 70 proposed local housing societies of Dharavi, were supportive of the plan because of the additional living space and infrastructural incentives it promised. Prashant Anthony of PROUD explained, "In the earlier individual development model, developers were only interested in commercially viable land like street corners and heavy footfall areas like railway stations. Mehta's sectoral approach ensures that Dharavi residents will be benefited with significantly more residential space free of cost as well as better roads, drains, electricity and drinking water supply. Plus, in this plan, the SRA has made it mandatory for the developers to work together with local NGOs to ensure that the entire area gets developed equitably."[20]

The second key difference with existing policy was that instead of residents choosing the developer on a building-by-building basis, the government would choose the developer for each sector through a bidding process. The developers would also be responsible for maintaining the buildings and amenities they constructed for 15 years.

An important aspect of this public-private partnership framework was that the government would not need to subsidize the redevelopment process. Mehta's detailed mapping of Dharavi and projections based on real estate market conditions indicated that such a sectoral redevelopment could in fact be a highly profitable opportunity for a private developer, and that the government could also generate revenue by asking for a "premium" from private developers. Estimates suggested that if this approach was applied to all slums in Mumbai, not just Dharavi, the government stood to gain nearly $25 billion.[21]

It took many meetings and discussions to convince administrators in charge of slum redevelopment that this sectoral approach could in fact work. At the same time, Mehta personally met with hundreds of residents in Dharavi to elicit their views as well. Finally, he had to convince members of the ruling Congress party. Mehta remarked, "I abused the sense of guilt felt in political circles that prior redevelopment work had not made progress. I found myself telling politicians, 'if you convert this proposal into policy, one signature of yours can do more for poverty than Mother Theresa.'" In 2004, the Maharashtra state government passed a government resolution to adopt Mukesh Mehta's sectoral approach to redevelop Dharavi.[22] The Slum Redevelopment Authority (SRA) modified Mehta's proposal by designating five sectors in Dharavi rather than 12 in order to make the project more manageable. It also introduced a transparent bidding process for development rights over each sector. Over the next few months, the government distributed 70,000 leaflets in six different languages to explain the plan to Dharavi's residents. Mehta's Community Development team, along with the SRA Community Development Team, also presented over 300 PowerPoint presentations to resident groups ranging from 25 people to 5,000 people in size.

Dharavi's Residents and Businesses

Objections to the Dharavi Redevelopment Project (DRP) were raised by factions of Dharavi residents and informal entrepreneurs as well as some NGOs working in the area. These groups felt that several aspects of the project had been left vague, including infrastructure planning, environmental impact assessments, how land would be acquired from private owners, and how residents eligible for the rehabilitation housing could prove their eligibility. Community buy-in was essential for the project to proceed, given the considerable political clout of Dharavi's residents. "Unlike smaller slums, Dharavi cannot be flattened in a collusion between politicians and real estate developers," stated Sheela Patel of SPARC, an NGO which had been active in Dharavi for more than two decades.[23]

Mukesh Mehta countered these objections by pointing out that the DRP had produced a transportation and infrastructure planning report, that No-Objection Certificates had been obtained from eight different government departments involved in urban planning, and that the developers were required to obtain environmental clearances after the contracts were awarded. In addition, strong support for the project had been expressed by local political representatives as well as the chairmen of cooperative societies in Dharavi.

These concerns, sometimes expressed through peaceful protest marches, caused a significant delay in moving forward with the project, despite the fact that the government had appointed an officer in 2004 to specifically oversee the DRP. In July 2008, Gautam Chatterjee was appointed to this position, with a mandate to understand the needs of various stakeholder groups and take the project forward. Chatterjee had significant experience in slum redevelopment in Mumbai, having served as the director of the Prime Minister's Grant Project (PMGP) in 1988 and later as the head of the SRA for three years.

Residents

From the government's perspective, adequately addressing the needs of the residents was most critical to the success of the project. The DRP had originally proposed that only families that could prove residency prior to January 1995 through the electoral rolls would be eligible for the free rehabilitation housing. Critics of the eligibility date contended that, "the date that was chosen and the kind of documentation that was required for proof have major implications for the number of eligible families."[24] Thousands of residents living in Dharavi worried that they were at risk of being displaced by the plan. In the face of such opposition, the DRP revised the eligibility date to January 2000.[25] In January 2009, the government began distributing ID cards to Dharavi residents in order to identify those who would be eligible for rehabilitation.[26]

Some observers felt that the concerns of renters in Dharavi had not been addressed. Three-fourths of the structures in Dharavi had a "mezzanine" level that either served as a small scale industrial unit or as additional space that was rented out to families. As per the SRA guidelines which applied throughout Mumbai, only the residents on the ground floor were eligible for rehabilitation benefits. Jokin Arputham, president of the Dharavi Bachao Andolan and National Slum Dwellers' Federation, said, "A majority of plots have more than one storey, which have been rented out. This has not been taken into account in the present DRP plan, which means that as many as 30-40% of the residents will not be rehabilitated."[27]

There was also controversy regarding the exact number of families to be rehabilitated. An initial socio-economic survey commissioned by the SRA in 2004 remained incomplete, and it was decided that the developer would complete the process after the contracts were awarded. While the project planned to rehabilitate 57,000 families, critics said that the figure was too low and estimated that over 90,000 families lived in the area. In 2007, the SRA appointed MASHAL, a non-profit organization, to undertake a revised socio-economic baseline survey of all slum dwellers and business owners in the Dharavi area. In June 2009, MASHAL's survey identified 59,165 dwelling units to be rehabilitated rehabilitated, including 2180 commercial units for people outside Dharavi who would be affected by this large project.[28]

Another point of contention was the size of the proposed rehabilitation housing. The DRP had already increased the area of rehabilitation housing from 225 square feet to 300 square feet, with an option of buying an additional 100 square feet at construction cost.[29] However, there were continuing demands from the opposition Shiv Sena party for residents to get at least 400 square feet per unit. While their homes were being redeveloped, families were to be provided housing in transition settlements within their sector. Though the DRP provided legal ownership of the redeveloped unit to the slum families, it also included a ten-year restriction on reselling or renting the apartment in the open market. Residents were also unhappy because the DRP removed the ability of the residents to choose the developer for their area. In January 2009, Chatterjee convinced the government to appoint an Expert Committee for the DRP, which included several representatives from NGOs working in Dharavi.[30]

There was also disagreement on the ideal height of the new housing structures. The DRP proposed a limit of seven floors per building. The government feared that building higher than seven floors might result in 'vertical slums' which would have higher maintenance costs. Also, the logistical issues around transporting goods and wastes via staircases and elevators from high-rise buildings would be challenging. However, the exceptionally high population density led the SRA to relax this constraint to allow buildings up to 13 floors, and even higher if the local community desired.

Several observers questioned whether the local community could be preserved if real estate prices rose significantly. The concern was that the residents would sell their newly acquired housing, and relocate to other slums within the city. However, Hukumraj Mehta, a pharmacy owner and Dharavi resident argued that aspirations would change with legal ownership, and that "even if the owners want to move out, their children will not be willing to go and live in a slum."[31]

"Slumdogs" or Entrepreneurs: The Challenge of Informal Businesses

Despite the illegal status of most settlements, Dharavi was an entrepreneurial slum. A study by Center for Environmental Planning & Technology indicated that Dharavi had close to 5,000 informal (unregistered) businesses.[32] Only 40% of the total area was under purely residential use; nearly 11% was under commercial or industrial use, and a further 21% of land was under mixed residential and commercial use (**Exhibit 8**). These informal enterprises were estimated to produce goods worth about $600 million annually, which was more than the output of several newly established Special Economic Zones around the country.[33] Dharavi was also unusually self-sufficient: a government survey estimated that 80% of the people who lived in Dharavi earned their income from production within the area.[34] Gautam Chatterjee said, "Business activity here is so significant that Dharavi should be viewed as an industrial township rather than just a residential area."[35]

Small-scale recycling units, involved in the entire supply chain from rag picking to refining plastics which were then exported to China, were the largest employers in Dharavi. Most of the 200,000 people collectively employed in the recycling industry were day laborers, women and children. The other major areas of production were the leather industry, food preparation, textiles and pottery work. Though enterprise in Dharavi was thriving, critics contended that many of these informal businesses violated environmental and labor laws.

Informal business enterprises were common in most developing countries. In 2000, more than 130 million people in India worked in the informal sector, accounting for 83% of the country's non-agricultural workforce.[36] Street vendors, home-based workers, and small retail operators were all considered informal workers. Most informal employees worked under the stipulated minimum wage and without proper legal documentation or health and retirement benefits. The informal economy accounted for 72% of the non-agricultural workforce in Sub-Saharan Africa, 65% in Asia and 51% in Latin America.[37]

In India, informal entrepreneurs faced several hurdles in entering the formal sector. According to the World Bank's annual "Doing Business 2009" survey, India ranked a disappointing 122nd out of 181 countries in the ease of doing business, behind nations like China, Egypt and Bangladesh.[38] Complicated procedures for registering business property, a confusing tax structure and lengthy credit cycles were all cited as obstacles for starting a new business (see **Exhibit 9** for a cross-country comparison of these indicators). Yuvraj, an informal business owner who sold school bags, added, "The process of registration is very cumbersome. The forms were complicated and required a lot of time to fill up. After doing this, I would have to make frequent trips to the government offices. All this was very time consuming."[39] While starting a formal business in India was complicated, closing a formal business in India was even more difficult as completing bankruptcy procedures could take up to ten years. Entrepreneurs also felt that by registering their business, they would be under the government's purview and subject to frequent inspections, even if they did not generate enough revenue to be taxed.

Unregistered businesses faced their own share of problems. Since they were not recognized by the government, they were ineligible for bank loans and had to rely on local moneylenders who often charged astronomical rates of interest. Furthermore, their operating costs were higher as they did not qualify for government subsidies. In Dharavi, these costs were compounded by the fact that most of the business owners were squatters who had no legally documented right to live on the property they occupied. A majority of Dharavi's residents were unable to open bank accounts because they could not furnish proof of legal residence or acceptable proof of identity. Gaja Ghosh, who owned a leather tannery that generated $40,000 in revenue per year, remarked that he was unable to get a bank loan, "just because I am from Dharavi." [40] Many business owners, therefore, felt that the legalization of their living and working areas would generate more revenue for their business. Rajan Pote, a leather belt maker who generated $1 million a year in revenue, remarked, "I am considering branching out into exports. But a letter of guarantee from a bank would go a long way in establishing my credibility in the export business."[41] The lack of a legal address also translated into a fear of eviction, exemplified by the periodic slum eviction drives, such as the one conducted by the Mumbai government in November 2004, which demolished 92,000 homes in 44 slum areas, and displaced more than 400,000 people.[42]

The issue of informal businesses loomed as the largest source of uncertainty in the DRP. Some residents were concerned that the 300 square feet homes would not be enough to accommodate their informal business activities. Mid-scale manufacturing activities in leather tanning, recycling, fabric dyeing and pottery employed a bulk of the workforce in Dharavi. Many felt that they were threatened under the new plan, since pottery kilns and leather tanning were polluting industries. A local business owner remarked, "We need some alternative jobs right away if the government wants to stop polluting industries…There are 50,000 workers in recycling units who are leaving the place due to the uncertain future."[43]

Significant changes were made to the original plan to address these concerns. Developers would now be required to build 6% extra floor space in residential buildings, which would serve as community workspaces for home-based businesses. All other businesses would be provided 225 square feet for free, and the opportunity to purchase additional area at construction cost. Polluting industries were proposed to be rehabilitated in separate buildings, which would be provided with pollution control devices.

The DRP proposed to go beyond rehabilitation of these industries, and provide businesses with infrastructure to access better raw materials and trained labor, and thereby enter the global market with better products. Industry-specific institutes were be set up to impart best practices. The National Institute of Design was committed to setting up a branch in the redeveloped Dharavi, and in partnership between the government and the private sector, a Special Economic Zone was to be established for the jewelry, leather and IT industries. The SEZ was expected to generate $1.4 billion and create employment opportunities for 150,000 people.[44] However, it would take several years for such facilities to be established.

Alternative Models for Slum Redevelopment

In 2001, nearly 924 million people were estimated to be living in slums worldwide, the majority of whom were in developing countries. 43% of the urban population in developing countries lived in slums, and 60% of all slum-dwellers in the world were found in Asia. As developing countries urbanized, these numbers were expected to rise exponentially.[45] 25% of India's urban population lived in slums (see **Exhibit 10** for worldwide slum populations). Several different approaches had been recommended and attempted to address the problem of slum redevelopment.

One approach involved reforming restrictive land regulations, which would increase private owners' incentives to develop their land and prevent squatting. In Mumbai, the Urban Land Ceiling Act, repealed only in 2007, capped individual land ownership to 500 square meters; such small parcels were uneconomical for real estate development. A further constraint to private real estate development was the low Floor Space Index (FSI). In Mumbai, the FSI had been restricted to 1.33 in the city and 1.00 in the suburbs since 1991, with a few exceptions for business districts like Nariman Point, where the FSI was 4.5. This was considerably below the levels prevailing in the business districts of other major cities, such as the FSI of 10 in Singapore or 17 in Manhattan.[46]

In parallel to the DRP, other redevelopment efforts were underway in Mumbai. The Mumbai airport slum rehabilitation program aimed to find alternative land to relocate and resettle approximately 80,000 slum-dwellers living on 276 acres of airport land. In addition to an increased FSI of 3.5, a major developer incentive in this project was the provision of Transferable Development Rights (TDR), where unused FSI from a project could be used by the developer or traded to another developer to use on a different project. In the case of Dharavi, developers had to request special permission in order to use the TDR in locations outside Dharavi.

The airport rehabilitation project, which Mehta was also a consultant on, began in 2007. It experienced significant delays due to strong criticism it faced for not performing due diligence on several fronts: the exact resettlement area was not made clear, the current survey was alleged to grossly underestimate the number of families living in the area and there were demands for a new baseline socio-economic survey. Facing such opposition, in February 2008, the developer Housing Development and Infrastructure Ltd (HDIL) announced that it would redevise its strategy taking "municipal corporators, councilors and NGOs into confidence," and expected the rehabilitation project to experience a two-year delay.[47]

Another approach towards slum redevelopment involved legalizing existing slum communities. On Brazil's *favelas* (large illegal settlements on public land), a policy instrument called Concession of the Real Right to Use (CRRU) was adopted in several cities in the early 2000s. The CRRU conferred private property rights for a community living on publicly owned land for up to 50 years. Though the CRRU did not establish permanent ownership of land, *favela* residents were allowed to use their home as collateral, and were entitled to legal protection and municipal services.[48] A similar approach was outlined by the Delhi government in 2007 as part of their Master Plan 2021, which paved the way for the regularization of up to 1500 unauthorized settlements in India's capital.[49] Some experts felt that Mumbai's approach of providing "partial" property rights based on residence could prove counter-productive. Songsu Choi, Lead Urban Economist at the World Bank, said, "Providing protection for those living in slums before 1995 in fact encourages people to remain in slums, rather than moving to alternative locations. A better option would be to provide them with full property rights to the land they are occupying at politically acceptable prices. This will give them an incentive to sell the land to developers, or improve on site, and reap the benefits of high land values."[50]

In 2005, the Kenyan government formulated an innovative plan to invite the private sector for large-scale slum upgrading in Nairobi's Kibera slum. Corruption scandals and political uncertainty slowed the implementation of this project.[51] Many NGOs successfully provided housing to slum-dwellers, such as SPARC in Dharavi or Habitat for Humanity International in South Africa. These projects were typically small in scale—a few hundred homes—and therefore could not be a model for large and densely populated slums.

Even without government encouragement, private companies were increasingly approaching slum dwellers as homeowners, formulating products specially tailored to their needs. For instance, Mexico's largest cement company CEMEX set up women's groups, where each member agreed to take turns collecting small payments from each other that were saved toward making home improvement expenses. For slum dwellers, this turned out to be a better option than accessing the informal credit market at exorbitant interest rates. By 2004, this scheme was being effectively employed in 22 Mexican cities, and CEMEX was considering replicating the program in other emerging markets such as Venezuela, Egypt and the Philippines.[52] Similarly, Urbi, one of the largest home developers in Mexico, developed an innovative mortgage scheme for workers in the informal economy, in which their rent served to build their credit history. By proving their ability to make timely payments, they could then qualify for federal mortgage subsidy programs and purchase deeded property. By 2008, Urbi had around 11,500 clients that had bought homes through the program.[53] However, large-scale private sector slum redevelopments with in-situ rehabilitation of residents, such as that planned for Dharavi, were rare.

To Bid or Not to Bid?

It was March 2009, and the global credit markets were at a standstill. Real estate prices around the world had toppled and could very well fall even further. Earlier in the year, when asked to present their technical master plan to the SRA, only 14 of the 19 shortlisted consortia continued with the project. Several developers were affected by the declining financial health of their international partners. For instance, the developer Akruti's Dubai-based partner Limitless LLC withdrew from the project, and India's largest slum redeveloper HDIL withdrew after their partner Lehmann Brothers filed for bankruptcy in the United States.[54]

The upcoming state assembly elections in 2009 also threatened the Dharavi Redevelopment Project. With politicians having a history of scrapping redevelopment schemes spearheaded by a previous administration, a change in the political guard could jeopardize the entire project. Mukesh Mehta remarked, "The challenge with Dharavi is that all stakeholders need to be an integral part of the project and feel responsible for making the change, and it is therefore crucial for the DRP to obtain all party support."[55]

Redeveloping Dharavi, the largest slum in Asia, would be a monumental benefit to Mumbai, to India, and even to the concept of private sector impact on the worldwide problem of slums. The project would catapult Warwick and its Indian partners into the forefront of a public/private development movement that would likely continue for decades. And with some of the most valuable land in the world, pre-approved development rights, and virtually limitless potential demand, the project could be immensely lucrative.

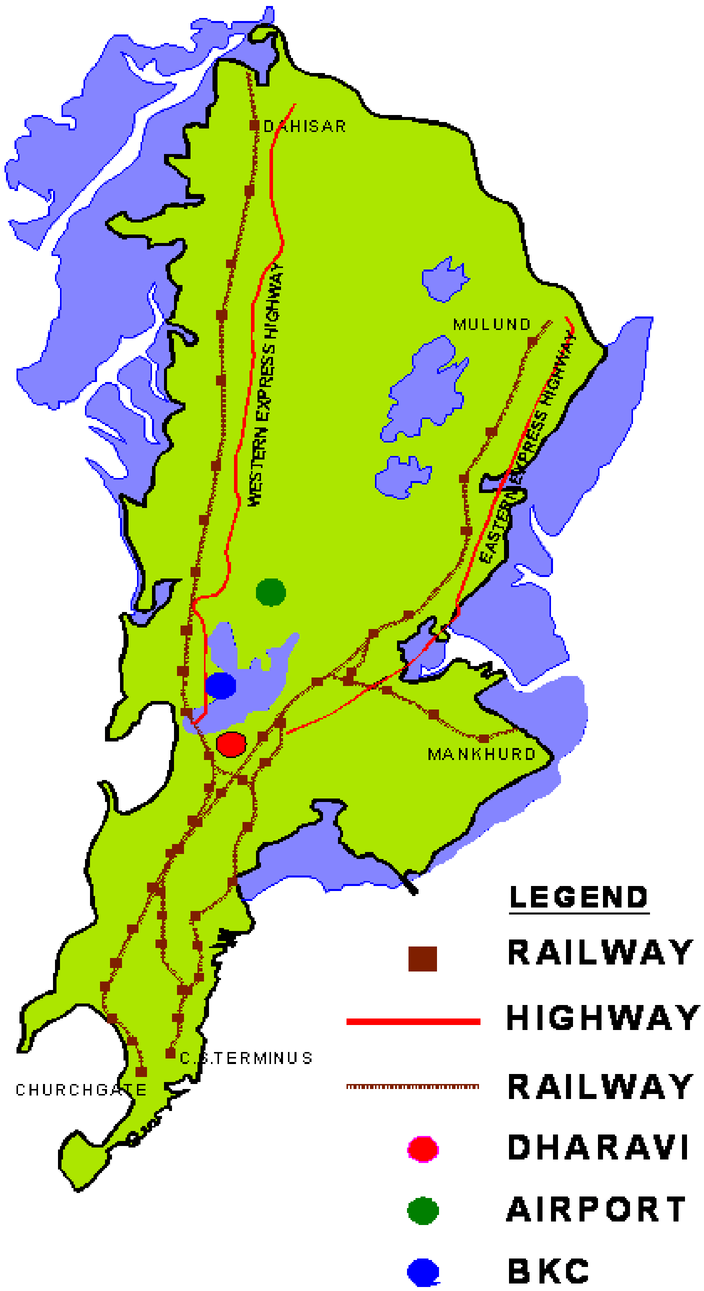
Warwick was a real estate fund, not a political strategy firm. Hollen wondered whether the government might be flexible on some of its contract requirements, or perhaps offer additional guarantees and assurances with respect to some of the major risks and conditions. For example, one condition included the government's insistence that construction of slum rehab units proceed at the same pace as construction of any for-profit apartments. Hollen could not help but notice that if that phasing scheme were adjusted so that all the for-profit apartments could be built and sold first, the impact on his cash needs and IRR might allow him to increase his "bidder's premium" payment significantly. Would the government ever go along with such a radical change to the plan? It seemed unlikely. But somebody was going to have to get creative or this project might not make it through the global recession.

Hollen looked at the sensitivity analysis again, trying to get comfortable with the interplay of cost to build, price to sell, and cost of capital. He reviewed the backup calculations once more, pondering the assumptions and relationships therein. Bid the minimum, increase the "bidder's premium," or walk away from the contest? Hollen made up his mind and knew what he had to do. No matter what the choice, he knew he would have a lot of explaining ahead.

Exhibit 1 Typical Slum and Chawl Structures in Mumbai

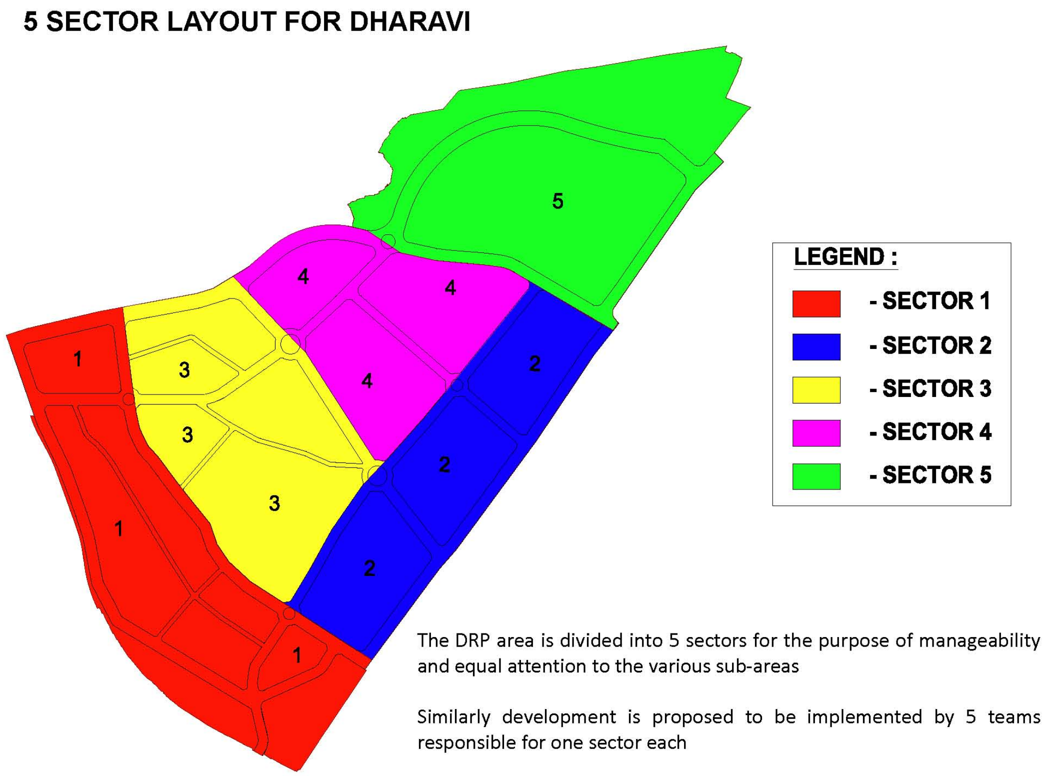
Source: HBS India Research Center.

Exhibit 2 Location of Dharavi within Mumbai



Source: Mukesh Mehta, "Slum Free Cities: Vision 2020," presentation to case authors, December 8, 2008.

Exhibit 3 Detailed Map of Dharavi



Source: MSMM Consultants.

Exhibit 4 Residential Property Prices in Neighborhoods around Dharavi (INR per square foot)

Area	2005	2006	2007	2008	2009
Sion	3,500-5,000	4,000-8,000	6,000-11,000	8,500-11,000	6,500-9,500
Kurla	2,000-2,300	2,200-4,000	3,000-4,500	3,500-6,500	4,000-6,500
Napeansea Road	NA	15,000-40,000	15,000-45,000	22,000-70,000	20,000-65,000
Worli	6,000-10,000	10,000-35,000	12,000-35,000	18,000-50,000	18,000-45,000
Chembur	3,500-4,500	3,500-7,000	4,000-7,000	4,000-7,000	5,500-7,000
Bandra (W)	5,500-10,000	9,000-22,000	9,000-22,000	13,000-30,000	16,000-28,000
Bandra (E)	4,000-6,000	5,000-8,000	6,000-9,500	6,000-9,500	7000-11,000

Source: Adapted from Times of India, Times Property Supplement, page 1, for the month of March in each year http://epaper.timesofindia.com/archive, accessed May 8, 2009.

Exhibit 5 Costs and Returns from Bidding on Dharavi Redevelopment Project

Exhibit 5a: Notes and assumptions for Exhibits 5b and 5c

Exhibits 5b and 5c present the tradeoffs in cost to construct, market price, and cost of capital for the Dharavi project. These exhibits were developed by the casewriters as an illustration. The figures and relationships are meant to approximate the real project, but they have been simplified and disguised for discussion purposes.

Exhibit 5b is a Sensitivity Analysis across three key aspects of the project: cost of capital, cost of construction, and realization of market price. For three different interest rates (5%, 10%, and 15%), a range of inputs is analyzed for cost to construct and market price received. The table indicates the Return on Equity (ROE) for each combination. This is a useful comparison of the profit margin as a percentage of the equity investment.

The ROE calculation does not take the time value of money into account. Further, a number of other factors are held constant for simplicity in this baseline analysis, but in actual practice these also would be variable.

The baseline pro-forma is presented in **Exhibit 5c**. This is a simple layout of sources of funds and uses of funds to build the project, assuming for illustrative purposes that it is all built in one time period and then sold in another. A five year period for construction loan interest is assumed. In practice a multi-year cash flow model would be used.

Baseline assumptions for **Exhibit 5c** include:

- Project Cost = Total Uses of Funds
- Project can be financed with debt at 70% of Project Cost
- Square Foot areas are as indicated
- Product Mix between residential and commercial is as indicated
- Ratio of for-profit square footage to rehab and civic/workspace square footage for slum dwellers is 1:1.33
- Government floor for Bidder's Premium is 450 INR/SF of slum rehab and civic/workspace
- Approval Costs include a variety of formal and informal payments relating to permissions and approvals
- Revenue is as noted
- Profits are the excess of revenue over costs. ROE is profit / equity.

Source: Casewriters.

Exhibit 5b: Sensitivity analysis with respect to cost of construction, sale price and cost of capital

5% Cost of Capital		Price (INR) Per Sq Ft of Market Rate Apartments		
	ROE	8,000	10,000	12,000
Cost (INR) Per Sq Ft of Slum Rehab	800	125%	188%	251%
	1,200	25%	74%	122%
	1,600	-40%	0%	41%

10% Cost of Capital		Price (INR) Per Sq Ft of Market Rate Apartments		
	ROE	8,000	10,000	12,000
Cost (INR) Per Sq Ft of Slum Rehab	800	28%	86%	145%
	1,200	-53%	-7%	39%
	1,600	-104%	-66%	-29%

15% Cost of Capital		Price (INR) Per Sq Ft of Market Rate Apartments		
	ROE	8,000	10,000	12,000
Cost (INR) Per Sq Ft of Slum Rehab	800	-23%	33%	88%
	1,200	-92%	-49%	-6%
	1,600	-137%	-101%	-66%

Source: Illustrative computations by casewriters.

Exhibit 5c: Sources and Uses of Funds

Exchange Rate 50 : 1 — All currency in INR

SOURCES		
Debt Financing		
Loan to value		70%
Interest rate		10%
Principal		153,237,720,577
Equity		65,488,774,760
Total Sources		218,726,495,337.22
USES		
Slum rehab		
Total cost of transit housing		11,970,000,000
Slum rehab (apartments & amenities)		
# of units		57,000
SF/unit		300
Cost/SF		1,200
Cost/unit		360,000
Total cost of slum rehab		20,520,000,000
Slum workspace/civic space		
# of units		18,000
SF/unit		300
Cost/SF		1,200
Cost/unit		360,000
Total cost of slum wrk/civic space		6,480,000,000
Market rate development		
Total allowable SF		30,000,000
Residential allocation		50%
Commercial allocation (allowable)		50%
Commercial allocation SF (allowable)		15,000,000
Actual % of allowable commercial %		100%
Market rate apartments		
# of units		15,464
SF/unit		970
Cost/unit		2,328,000
Total cost of market rate apt's		36,000,000,000
Market rate commercial space		
# of units		10,000
SF/unit		1,500
Cost/unit		3,600,000
Total cost of mkt rate comm space		36,000,000,000
Infrastructure - roads, w&s, electric		
Cost/SF		400
Project ares in SF		70,000,000
Total cost of infrastructure		28,000,000,000
Total construction costs		138,970,000,000
Bidder's premium		
Premium PSF of free sale		450
Total bidder's premium PSF of free sale		13,500,000,000
Construction loan interest		31,507,681,052
Longt-term maintenance fund		1,500,000,000
Land cost		-
Transactions costs	2%	1,285,714,286
Approval Costs as % of other costs		23%
Approval Costs		31,963,100,000
Total Uses		218,726,495,337

REVENUE	
Market rate development	
Market rate apartments	
# of units	15,464
SF/unit	970
Price/SF	12,000
Revenue/unit	11,640,000
Total revenue of market rate apt's	180,000,000,000
Market rate commercial space	
# of units	10,000
SF/unit	1,500
Net rent/SF/Yr	600
NOI	9,000,000,000
Cap Rate	14%
Total revenue of mkt rate comm space	64,285,714,286
Total Project Revenue	244,285,714,286
RETURNS	
Revenue	244,285,714,286
Cost	218,726,495,337
Profit	25,559,218,948
Profit Margin	10%
Return on Assets	12%
Return on Equity	**39%**

Source: Illustrative computations by casewriters.

Exhibit 6 Macroeconomic Trends in India

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
GDP- Current US$ (billion)	416.25	450.48	460.18	477.85	507.19	599.46	700.92	808.71	916.25	1170.97	1111.32
GDP- Constant 2000 US$ (billion)	411.92	442.35	460.18	484.19	502.43	544.49	589.56	644.02	706.43	770.20	761.74
Real GDP Growth Rate (%)	6.19	7.39	4.03	5.22	3.77	8.37	8.28	9.24	9.69	9.03	7.10
Inflation, consumer prices (%)	13.23	4.67	4.01	3.68	4.39	3.81	3.77	4.25	5.80	6.37	
Official exchange rate (rupees per US$, annual average)	41.26	43.06	44.94	47.19	48.61	46.58	45.32	44.10	45.31	41.35	44.00
Lending interest rate (%)	13.54	12.54	12.29	12.08	11.92	11.46	10.92	10.75	11.19	13.02	13

Source: Adapted from the World Bank- World Development Indicators, http://www.worldbank.org/data/wdi/home.html, accessed April 16, 2009.

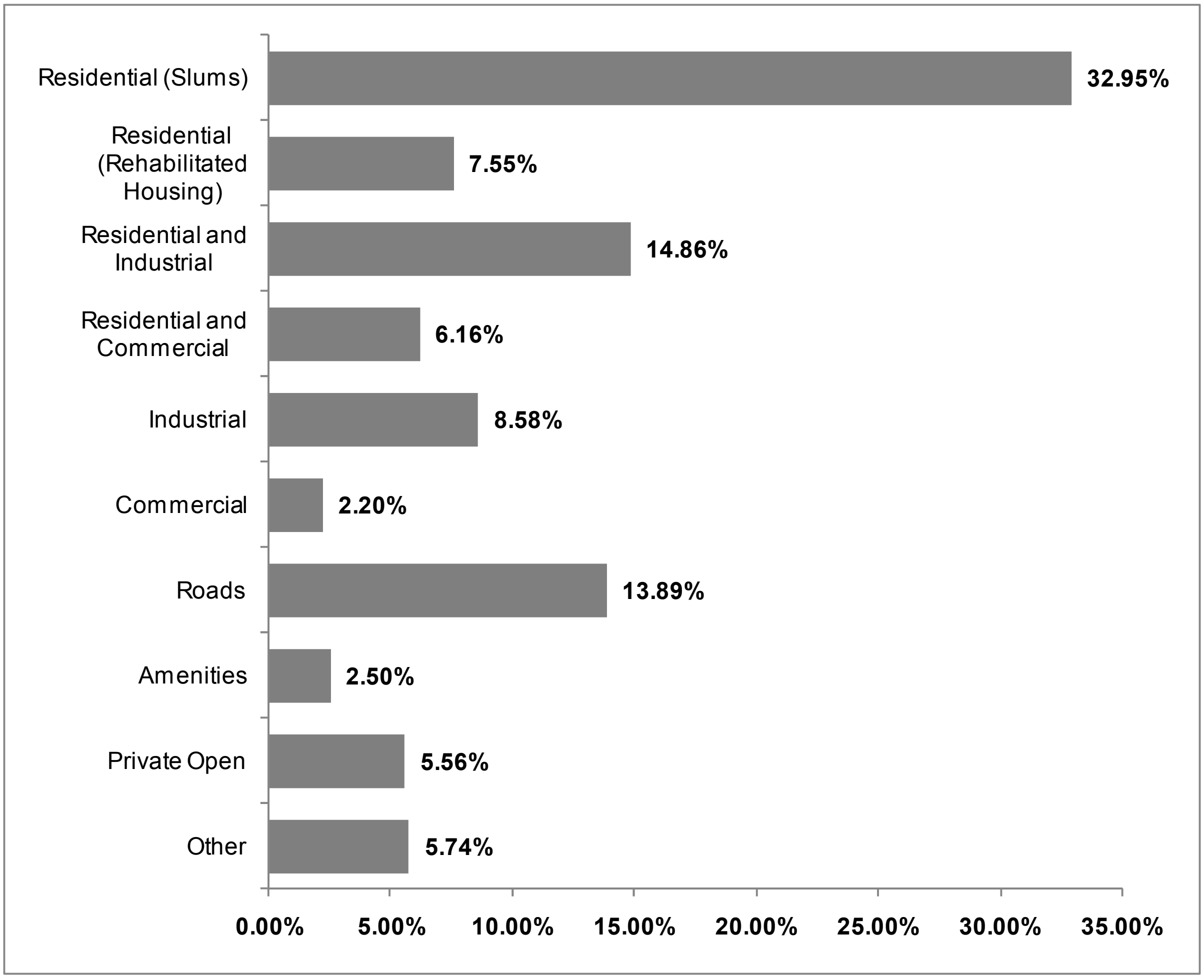
Exhibit 7 Political Trends in Maharashtra State

	1990	1995	1999	2004
Seat share of Congress coalition (%)	49	28	46	49
Seat share of Shiv Sena coalition (%)	33	48	43	40
Party identity of Dharavi representative in state legislature	Congress	Shiv Sena	Congress	Congress
Party identity of Dharavi representative in national parliament	Shiv Sena	Shiv Sena	Shiv Sena	Congress

Source: Election Commission of India Statistical Reports (http://eci.gov.in, accessed May 2009).

Notes: Congress coalition includes the Indian National Congress (INC) and the Nationalist Congress Party (NCP). Shiv Sena coalition includes the Shiv Sena party and the Bharatiya Janata Party (BJP).

Exhibit 8 Land Use Patterns in Dharavi



Source: Kamala Raheja Vidyanhidi Institute for Architecture 2006/07, cited in *Dharavi: Documenting Informalities*, The Royal University College of Fine Arts, 2008, page 121.

Exhibit 9 International Comparisons of Business Environment and FDI Inflows

	India	China	Brazil	Russia	Malaysia	South Korea	Indonesia
GDP (2007), billion USD	1,171	3,280	1,314	1,291	181	970	433
FDI/GDP (%)	1.96	2.55	2.63	4.06	4.65	0.27	1.6
Ease of doing business ranking (1=best in the world)	134	93	121	96	20	23	129
Days to start a business	35	35	152	28	13	17	76
Cost of hiring a new worker (% of salary)	17	44	37	31	NA	NA	NA
Firing costs (weeks of wages)	56	91	37	17	75	91	108
Protecting investors rank	33	83	60	60	4	70	53
Ease of tax system rank	158	168	151	98	21	43	116
Total tax rate (% profit)	81	77	72	54	35	34	37
Days to enforce a simple credit contract	1420	292	616	178	600	230	570
Years to close a business (bankruptcy)	10	2	4	4	2	2	6
Bankruptcy recovery rate (cents on the dollar)	13	32	12	29	39	81	14

Source: World Investment Report, 2008. www.unctad.org/wir. Accessed October 2008; GDP data from World Bank, World Development Indicators (revised September 2008).

Exhibit 10 Worldwide Slum Populations

Country/City	Land area (sq km)	Population (millions) 1990	Population (millions) 2001	Slum population (millions) 1990	Slum population (millions) 2001	Urban population (%) 1990	Urban population (%) 2001
World	148,940,000	5,255.0	6,134.0	735.7	920.1	44	48
Asia	44,579,000	3,041.0	3,593.0	425.7	539.0	31	37
China	9,596,960	1,155.3	1,285.0	137.9	178.3	27	37
Indonesia	1,919,440	182.5	214.8	18.0	20.9	31	42
Brazil	8,511,965	148.0	172.6	49.8	51.7	75	82
Pakistan	803,940	109.8	145.0	26.4	35.6	31	33
Bangladesh	144,000	110.0	140.4	19.0	30.4	20	26
Nigeria	923,768	86.0	116.9	24.1	41.6	35	45
Mexico	1,972,550	83.2	100.4	13.9	14.7	72	75
India	3,287,590	844.9	1,025.1	131.2	158.4	26	28
Mumbai	438	9.93	11.91	4.3	5.8		
Delhi	1,483	8.42	9.82	2.2	2.7		
Kolkata	187	11.02	13.11	3.6	4.3		
Hyderabad	650	4.34	6.30	0.9	1.3		
Bangalore	800	4.13	4.29	0.5	0.5		
Chennai	174	3.84	4.34	1.1	1.2		
Pune	430	2.49	2.54	0.4	0.4		
Nagpur	218	1.66	2.05	0.5	0.7		

Sources for population numbers: http://ww2.unhabitat.org/programmes/guo/documents/Table3.pdf, accessed March 12, 2009; http://mospi.gov.in/comenv2000tab7.2.11.htm, accessed March 12, 2009; Census of India 1991.

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