



Markandeya Cooperative Housing Society

CASE STUDIES OF COLLECTIVE HOUSING IN ASIAN CITIES SERIES • JULY 2020

This is the story of a small slum community within Dharavi - Mumbai's largest slum - which decided to form a housing cooperative and redevelop their housing themselves, on the same site, using opportunities that came with two large government slum re-development programs. The 91 families in the Markandeya Cooperative were supported all through the long and difficult process of building their new housing by the Alliance of three organizations who work in close partnership: the National Slum Dwellers Federation, Mahila Milan women's savings collectives, and the Mumbai-based NGO SPARC.

- Project Markandeya Coop Housing Society
- Location Dharavi, Mumbai, India
- Size 91 households
- Finished 1998
- Type On-site reconstruction of an existing slum pocket (within a larger slum) into a low-rise apartment block, with long-term cooperative land lease to the public land the project occupies

CONTEXT, PROCESS AND PARTNERS

The city:

Mumbai is India's largest city and its commercial capital. For lack of any affordable housing options, some 60% of the city's 20 million inhabitants have no choice but to make their own homes in the city's slums, where they live in varying degrees of squalor, crowding and insecurity. It used to be that eviction was the only way the authorities knew to deal with slums, which were not seen as a bottom-up solution to the lack of affordable housing, but as a criminal act of squatting on land owned by someone else.

In the 1970s, though, laws were created which provide some protection against eviction, and since then, there have been all kinds of government programs to upgrade housing and living conditions in slum communities - most of them very bureaucratic, top-down, contractor-driven and doomed to barely make a dent in the problem. One of those programs was the Prime Minister's Grant Program (PMGP), which was launched in 1985, and channeled Rs.1 billion (US\$ 8 million) of central government funds to upgrade housing and living conditions in Mumbai's slums. A third of the program budget, Rs. 370 million (US\$ 29.9 million), was allocated to Dharavi, the city's largest and most prominent slum.

Dharavi continues to be a symbol of all that is thought to ail the city: squalor, overcrowding, communalism, lawlessness. But if you peel off its battered outer layer, Dharavi's vitality reveals itself as one of the city's authentic wonders. Everyone is rushing somewhere, all is in motion - money being made, deals being cut, things being worked out. Children go to school, mothers knead the dough for parathas, marriage feasts go on and small business thrive amongst teetering godowns of scrap tin and plastic. Once the Siberia of slum colonies, at the marshy edge of the city, Dharavi is now one of Mumbai's most vital hubs, both geographically and economically the center of town. All of Mumbai's anatomical lifelines - its water mains, sewers and electric conduits - pass under Dharavi, and its major rail networks, highways and dockyards line its boundaries. Dharavi is now 500 acres of extremely valuable land in the city's heart, with a density ten times that of surrounding areas, but with insufficient services or infrastructure.

The history of Dharavi is a remarkable story of sustained, piecemeal urban development, carried out by a million individual acts - a stolen brick here, a pocketful of rubble there, raising Dharavi up out of the brine, quarter-inch by quarter-inch. Houses sprang up on the fill, roads between the houses, rooms atop the houses, and rooms atop the rooms, until finally there was a city within a city. Elsewhere, land is reclaimed by tetrapods and venture capital, and sold off by the square millimeter to the highest bidder. Dharavi is the first tidewater in Bombay to have been reclaimed and developed entirely by urban poor homesteaders.

Most of the PMGP budget for Dharavi's improvement went into building trunk sewers, drains and other infrastructure, but some was earmarked for loans to build new housing. The idea was that the land would be leased to residents, through the cooperative societies they set up, the city would provide PMGP-financed infrastructure and amenities, and 5-story blocks of small apartments would be built by contractors to re-house the slum dwellers, financed by a combination of people's savings, PMGP subsidies and interest-free PMGP loans. In 1985, PMGP estimated Dharavi's population at about 50,000 households, and developed a plan in which 35,000 households would be accommodated in the PMGP apartment blocks and the remaining 15,000 households would be relocated.

Dharavi Vikas Samiti (DVS), a coalition of community groups in Dharavi that linked with the National Slum Dwellers Federation (NSDF), disputed that unrealistically low estimate and decided to carry out their own survey, with support from the Alliance. They counted over 120,000 households, as well as thousands of businesses and enterprises in Dharavi. This starkly different tally confirmed that a far bigger relocation than the one proposed by PMGP would be necessary.

Dharavi Vikas Samiti challenged the high cost of the new housing units and the scale of exclusion implied by the proposed PMGP plan, and developed an alternative plan, calling for low-rise buildings and no relocations at all (except for polluting tanneries). The necessary density would be achieved by reducing the planned open spaces, which would likely be encroached upon with new huts anyway. In DVS's alternative plan, the unit price for the housing could be reduced to Rs. 35,000 (US\$ 2,829) through innovative building design and cooperative management. PMGP conceded the low population estimate and the impracticality of a huge forced resettlement. It decided instead on a very different route - to upgrade most of Dharavi's housing and construct only 3,000 new units.

The community:

To outsiders, Dharavi may look like one gigantic slum, with huts built on top of huts, along lanes so narrow and dark that you sometimes have to turn sideways to pass through. But in reality, Dharavi is a patchwork

of hundreds of small pockets of people who practice the same trade or come from the same part of India and speak the same language. These pockets function as tightly-knit communities and have their own leadership structures and alliances, their own clear boundaries and their own systems for organizing themselves and supporting each other.

One area of Dharavi called Rajendra Prasad Nagar, which had been marked by the PMGP for new construction, was one of these mini-communities, and it was headed by a very active DVS member. Ten housing cooperatives had been formed by groups of neighbors within Rajendra Prasad Nagar, and they were all determined to take advantage of the PMGP scheme to build new housing for themselves collectively, in the same place they already lived. One of those cooperatives was the Markandeya Cooperative Housing Society, with 92 families, chaired by a grizzle-voiced, white-haired man named Chelliah. Most of the Markandeya coop members had migrated from the south Indian state of Andhra Pradesh. The men worked in the mills and the women were piece-rate beedi workers and seamstresses. They named their housing cooperative after Markandeya, an ancient Hindu sage who is revered in Andhra Pradesh.

Initiating the project:

Through their links with Dharavi Vikas Samiti and the Alliance, the people in Markandeya had seen the house models the Mahila Milan had designed and built elsewhere, with tall 14-foot (4.3 meter) ceilings, which allowed for a loft to be built inside, to expand the living space in very small units. To them, the unit designs being proposed by the PMGP, with low ceilings and just 160 square feet (14.86 m²) of living space were cramped and impractical.

In 1987, the people in Markandeya asked the Alliance to help them realize an alternative housing plan, with 14-foot ceiling units arranged in a three-story walk-up building, with wide corridors and common spaces on each floor which provided space for sleeping, chatting and children's playing. PMGP, which was legally required to let cooperatives determine their own approach, accepted Markandeya's decision to work with the Alliance to redevelop their own housing. But they questioned the unfamiliar lofts and high ceilings, the common spaces and the low-rise approach - all of which would mean fewer units being built on the land. It took three years to persuade the city government to approve the Markandeya plan.

Financing problems arose immediately. PMGP argued that since Markandeya had chosen to manage its own redevelopment, it would not be eligible for the PMGP subsidies or interest-free loans. So SPARC helped them to get loans from HUDCO, a government finance institution for low-income groups. By then, construction and materials costs had gone up substantially, so the amount Markandeya would have to borrow - and provide as down payment for the loan - had increased. To make things even more difficult, HUDCO required a 100% guarantee on the loan, since the land couldn't be used as collateral. SPARC was able to persuade Selavip, a foundation focusing on low-income housing, to provide the bank guarantee.

The Markandeya coop also faced difficulties managing the construction. The three-story concrete frame building was structurally very complex and required expertise in deep pile foundations and multi-story construction that the Alliance then lacked. Most local contractors, who knew that the cooperative was facing financial challenges, were reluctant to risk the job, and Markandeya had to settle for an inexperienced local builder. All this contributed to further delays and problems. Construction started in 1991, but it took until 1992 to pour the foundation, and by 1993, only part of the first floor had been built. By then, costs had increased by another 70%, which meant more loans would be needed.

In 1991, the Government of Maharashtra announced a new Slum Redevelopment Scheme (SRD) to help finance all new and ongoing slum reconstruction projects in Dharavi. The SRD provided a mechanism to cross-subsidize the projects by allowing developers to build additional units for sale on the open market, thereby cross-subsidizing slum residents' costs, but with the significant implication of bringing the market into the equation. In the 1990s, real estate values in Mumbai were skyrocketing, and developers were keen to make use of these new provisions, even in Dharavi, which by then was seen as a real-estate gold mine. As the Markandeya coop and the Alliance searched frantically for additional loans, an experienced private-sector developer stepped in and offered to complete the project within 18 months, using the new SRD policy. He offered to invest his own funds, requiring no further payments from Markandeya, and would alter the people's building plans only by adding two additional floors on top, with housing units that would be sold on the market.

Markandeya coop members felt the developer's offer was the only practical way to finish the building. The project management was transferred to the developer, along with the right to build and sell the extra units. The building would now be five stories tall, instead of three, the developer would sell an additional 87 units in the market, and the 91 coop members would get their apartments without having to invest another cent.

Cooperative members would still have their 14-foot tall apartment, but the market units on the upper floors would have lower ceilings. In 1995, a still more market-friendly policy update, the Slum Rehabilitation Scheme (SRS) allowed development rights to be transferred to other places, under certain conditions, but stipulated that the new housing built for slum dwellers be totally free. Because the Markandeya foundations had already built and were not designed to carry additional floors, the developer could not build more than five floors - but he could transfer the unutilized development rights to higher-priced areas in the city - an added bonus for the developer.

Some coop members were uncomfortable with this new arrangement for a number of reasons: they felt they were losing a chance to strengthen their community by building their own housing, and were afraid that the high-stakes market pressures being brought into the project might erode the collective values that had brought the coop members together in the first place. Construction continued, though, and the Markandeya residents were finally able to move into their finished apartments in 1998.

There was one last battle for the cooperative though. Under the SRS scheme, the redeveloped housing units were to be free, so the developer would have to refund the investments coop members and the Alliance had already made, and also clear the Selavip loan guarantee. The developer refused, so the people brought their case to the Slum Rehabilitation Authority (SRA), which adjudicated disputes among parties in slum redevelopment. After consideration, SRA required the contractor to pay off all arrears and give the Markandeya Cooperative ten of the 87 market units on top, to sell, the proceeds from which would go into a joint bank account to reimburse residents for costs the contractor should have covered.

Support groups and partners in the project:

- **The Alliance** is a partnership of three organizations which work closely together: 1) The National Slum Dwellers Federation (NSDF) was founded in the mid-1970s and uses collective savings, shelter training, and enumeration as tools to organize urban poor communities, 2) Mahila Milan ("Women Together") is a network of women's savings collectives, and 3) The Society for Promotion of Area Resource Centres (SPARC) is a Mumbai-based NGO which since 1984 has been working with the urban poor to access housing and sanitation in cities across India. The Alliance supported the Markandeya project throughout.
- **Dharavi Vikas Samiti (DVS)** is a coalition of community groups in Dharavi, associated with NSDF.
- **Municipal Corporation of Greater Mumbai (BMC)** is the local government authority in Mumbai. The BMC provided the land, infrastructure and basic services in the Markandeya project.
- **Housing and Urban Development Corporation (HUDCO)** is a financing company set up by the Government of India to support low-income housing. HUDCO gave the first housing loans to Markandeya.
- **SELAVIP (*Servicio Latino Americano Asiatico Vivienda Popular*)** is a Belgium-based donor focused on low-income housing. They provided the bank guarantee for the loan from HUDCO.
- **Prime Minister's Grant Project (PMGP)** was a slum redevelopment program, launched in 1985, which channeled national government funds to states and cities, to support the redevelopment of housing in urban slums, with construction subsidies, infrastructure grants and interest-free housing loans.
- **Slum Redevelopment Scheme (SRD)**, launched in 1991, was a state-level slum redevelopment scheme which incentivized private sector developers to rebuild housing in slum areas by allowing additional units to be constructed that could be sold at market prices.
- **Slum Rehabilitation Scheme (SRS), another developer-driven slum rehabilitation scheme, was launched in 1995**, and superseded all the previous schemes. SRS allows developers to transfer part of the surplus development rights on any slum site being redeveloped to other places, as long as they provide housing for the slum dwellers, according to certain standards and for free, in the same location.

LEGAL FRAMEWORK OF THE PROJECT

Legal background and legal status:

Dharavi was reclaimed from a tidewater and developed entirely by the urban poor. But because they had no legal claims to the land, they were considered to be squatters on public land. The Prime Minister's Grant Program was the first to give Dharavi's slum dwellers an opportunity to redevelop their housing and get legal land tenure, in the form of 35-year renewable land leases made to the housing cooperatives they set up. It took several years and innumerable struggles, but in 1991, the Markandeya Cooperative Housing Society was the first in Dharavi to legalize its land, under a 35-year renewable lease (free) from the Mumbai Municipal Corporation. As shareholders in the cooperative, the 91 member households (plus the buyers of the 87 units that were later constructed and sold on the open market, to cross-subsidize the construction) are owners of

their individual apartments. The apartments can be passed on to children and family members, and can be sold subject to the approval of the cooperative. All members of the cooperative are governed by the rules and regulations of the 1960 Maharashtra Cooperative Societies Act.

Markandeya was also the first slum-dwellers' housing cooperative in India to receive a direct loan from HUDCO, and the first in the State of Maharashtra to win planning permission to construct apartments with 14-foot ceiling heights in their building.

Government support:

The story of the Markandeya reads like a primer in all the ways government agencies and programs can delay, obstruct and undermine an unconventional and people-driven housing process. As the exasperated director of SPARC, Sheela Patel, put it in 1997, *"Everything that could be a problem has been a problem and has been faced by Markandeya and their supporters in the Alliance."*

Although the PMGP program entitled the Markandeya coop to plan and construct their own housing project, this was the first time an organized slum community decided to do just that. Top officials in the various departments concerned were sympathetic and supportive, but all the necessary permissions and documents had to be prepared and signed by officers and bureaucrats who were not used to dealing with people directly. Obstruction and delays dogged every step of the project. Neither the coop members nor their supporters fully understood how long it would take or how much it would cost to secure all the building permissions required for a complex project like this - *and there were 75 in total!* All the design innovations the project introduced met with objections and more delays: the 14-foot ceiling heights, the 180 sq ft apartments, the plan to build only three floors instead of five, and the use of roof terrace space for community programs. The rapidly changing regulatory environment also slowed the project down. During the ten years it took to plan and construct Markandeya, major new slum redevelopment policies were launched: the PMGP in 1985, SRD in 1991 and SRS in 1995. Though all those policies were aimed at improving the lives and living conditions of slum dwellers, they also brought many new problems, conditions and compromises for slum dwellers.

PROJECT FINANCING

Project costs and who paid for what?

- **Land:** The land on which the Markandeya project was built belongs to Mumbai Municipal Government, and was given to the Markandeya Cooperative for free, on a 35-year renewable lease.
- **Housing:** The full cost of constructing the 5-story Markandeya Cooperative building (which included 91 units for coop members + 87 units for sale on the market) came to Rs. 11.57 million (US\$ 935,327)
- **Infrastructure:** The trunk infrastructure in the project (including access to sewers, drains and water supply) was provided by Mumbai Municipal Government, under the PMGP, at no cost to coop members.

Financing:

The construction of the building was financed partly by the people (through their savings and loans from HUDCO), partly by government subsidies from the PMGP, partly by cross subsidies from selling their 10 market rate units, and partly by reimbursements from the developer from selling off the other market units and transfer of development rights. It's all a bit complicated, but here is a rough summary of the financing:

- **Down payment by cooperative members in 1987:** Rs. 5,000 (US\$ 404) per member x 91 members = Rs. 455,000 (US\$ 36,783).
- **PMGP housing subsidy:** Total Rs. 380,000 (US\$ 30,719).
- **Loan from HUDCO:** The amount HUDCO originally agreed to loan to the Markandeya Cooperative (@ 65% of the total cost) was Rs. 5 million (US\$ 404,203). The first instalment of Rs. 1.86 million (US\$ 150,338) was only given against a loan guarantee of Rs. 1 million (US\$ 80,841) provided by SPARC. The second instalment of Rs. 3 million (US\$ 242,522) was only given against a loan guarantee of Rs. 1.237 million (US\$ 100,000) provided by Selavip.
- **Loan from SPARC:** After cost escalations in 1992, SPARC made an interest-free loan to the cooperative of Rs. 200,000 (US\$ 16,168), using bridge funds from Bilance.
- **Developer contribution:** The developer paid off all arrears and gave 10 units to Markandeya Cooperative to sell in the open market, cross subsidizing their building costs further.

Final costs for cooperative members:

Finally, after all the loans, program subsidies, cross subsidies and reimbursements from the developer, the total amount actually paid by the Markandeya Cooperative came to Rs. 3.2 million (US\$ 258,690), which worked out to Rs. 35,000 (US\$ 2,829) per member, for their apartment - *which worked out to be exactly the amount they had budgeted in their original plan.*

DESIGN AND CONSTRUCTION

House design and layout plans:

For the Markandeya Coop members and their supporters in the Alliance, the project was their first chance to design and build a multi-story building which transformed a densely-crowded slum into a block of airy, light-filled apartments. Two local architects - Sharad Majajan and Neeta Bhatt of Purbi Architects - helped the people to develop their design ideas and transform them into a blueprint. The building's design drew on Mumbai's rich tradition of multi-story walk-up housing for low-income workers and laborers, and represented a big first step in understanding the kinds of building features that work for the poor. For the Alliance, the most exciting part of the process was drawing on 14 years' accumulated understanding about house design and the needs of poor communities, to develop walk-up housing types which really work, with the kinds of spaces families and communities need, with wide corridors for circulation and play space and floor layouts which provide room for community activities, day-care, meetings and cottage industries.

Shared toilets:

The Markandeya plan provided common toilets outside the apartments, which were to be shared by four or five families. This was in sharp contrast to unit plans proposed by the PMGP, in which each apartment had its own internal toilet. The people argued that the private toilets used up precious living space and raised project costs. What they didn't say, but understood very well, was that any housing unit that came with its own internal toilet, no matter how small, would be attractive to middle-class buyers, and would bring market forces into Markandeya. So the common toilets were a feature strategically designed to keep gentrification out and to ensure the poor residents who built Markandeya could stay there.

14 foot ceilings: Another interesting aspect of the design of the apartments in Markandeya was the 14-foot (4.3 meter) ceiling height, which allows families living in the very small apartments to build a loft and expand their living space a little. When families live in spaces barely ten feet by twelve and common walls on three sides, as many slum dwellers do, the only way to expand living space is by going up. People in crowded slums have been doing just that for years: erecting lofts and raising the roof to 14 feet, which allows seven feet of reasonable standing room above and below. You'll find 14-foot houses everywhere in Indian slums, in a thousand variations, from the most ramshackle to the fully concrete. They represent a design solution to crowding and limited resources that is sensible, even obvious. But in the state of Maharashtra, 14-foot houses were for many years considered illegal.

In 1989, the Alliance used the Markandeya project as the focus of a vigorous campaign to legalize 14-foot ceiling heights in the state. The units in the Markandeya building were based on the model house the Mahila Milan had first designed in 1986, with a 180 sq. ft. (16.72 m²) floor area, a 100 sq. ft. (9.3 m²) loft and 14-foot ceiling heights, but stacked up on several floors into a single building. The campaign included more model house exhibitions, press reports, scholarly articles and intense, behind-the-scenes lobbying. The campaign was successful. Permission for 14-foot units was first given to Markandeya, then later, the Development Control Rules were amended to allow 14-foot ceiling heights with half-lofts and to allow existing 14-foot houses in slums to be "regularized." The Urban Development Ministry followed up in January 1992, issuing the Government Resolution No. GVS-1091/2897/K7, which made 14-foot ceiling heights allowable in all slums in Maharashtra State.

Housing construction:

The construction of a structurally complex, three-story concrete building, on a difficult, marshy site, could not be handled by the Markandeya coop members themselves. So the work had to be done by a contractor. In the first stage of the construction, when there were a lot of problems and delays with the building finance, the people had difficulty finding a contractor willing to risk getting involved. Finally, they had to settle for an inexperienced local contractor, who took almost three years to bring the building only up to the first floor, despite constant supervision and pushing by the Markandeya coop members. When a group of slum dwellers from Pune came to visit the Markandeya project in October 1993, they sat with the cooperative's chairman, Mr. Chelliah, on mats on the ground-floor of the partly finished building. With an abundance of good humor, he described to the visitors the troubles they'd had with loan delays and with the local contractor whose work was proceeding at a snails pace, but called the experience a crash course in dealing with large bureaucracies and local government.

In 1995, when the SRS scheme was introduced in Dharavi, the Markandeya coop members agreed to let an experienced private-sector developer take over the project, even though the trade-off was adding extra floors and more units to the top of their building. But things went fast then, and the quality of the work was much better.

Project timeline:

- 1985:** PMGP scheme is launched in Dharavi.
- 1986:** Enumeration of Dharavi is carried out by DVS, with support from the Alliance.
- 1987:** Markandeya decides to redevelop their housing, asks Alliance for help.
- 1988:** Markandeya applies to PMGP for self-development.
- 1989:** Markandeya registers as a cooperative, starts planning their new housing.
- 1991:** Government launches the SRD scheme. Markandeya plans are approved by the city and PMGP. Construction begins with local contractor.
- 1992:** SPARC gives loan to the coop to start construction. SELAVIP gives guarantee for HUDCO loan. Building foundation work is finished. Contractor changes.
- 1993:** Only the ground floor columns and part of the first floor slab are completed. Costs rise by 70%. Private-sector developer takes over project, adds two floors of market rate units on top.
- 1995:** Developer and Markandeya apply to change the project status to be under SRD scheme. Government brings out the SRS scheme that allows Transfer of Development Rights.
- 1996:** Developer changes status of Markandeya project to be under the new SRS scheme.
- 1998:** Construction is finished. All 91 Markandeya coop members move into their new apartments.

IMPACTS OF THE PROJECT

Social and political impacts:

The Markandeya project took ten long years to complete, but it achieved several milestones along the way. It was the first slum redevelopment project in Dharavi to get land leased directly to a cooperative, and the first housing cooperative in India to receive a direct loan from HUDCO. This was the first case of the State giving legal permission for 14 ft (4.26 m) ceiling heights in multi-story building, and the first case of the apartments being legally owned jointly by the husband and the wife. The way the bank loans and guarantees were managed in the project was another special innovation that was used in many later projects by the Alliance.

The Markandeya project led to a profound restructuring of the housing delivery institutions in Maharashtra State. Through its advocacy at many levels, and through demonstration projects like Markandeya, the Alliance influenced the creation of policies like the SRD in 1991 and the more refined SRS in 1995. Those policies, in turn, helped thousands of slum dwellers to get permanent, secure, decent housing, through a cross subsidy strategy.

Lessons:

The enumeration that the community and the Alliance did challenged government statistics and improved the policy as a result. This methodology was later used successfully in other relocation sites. Design features the Mahila Milan had developed, such as the 14-foot ceiling and internal lofts to increase living space, proved to be applicable in multi-story buildings.

Problems:

Markandeya was plagued with problems right from the beginning: delays in registering the cooperative, delays in planning permissions, delays in funding, delays caused by an inexperienced contractor. Dealing with government agencies like the Municipal Corporation and HUDCO proved slow and difficult. All these delays lead to huge cost escalations and opened the door for a private-sector developer to step in. He did complete the project, and turned a nice profit on it, but when he refused to refund the people for the investments the various stakeholders had already made in the project, as per SRS rules, the Alliance had to go to the SRA for arbitration - and only then were the reimbursements finally made.

But despite the constant challenges, disputes, setbacks and frequent breakdowns in leadership, the story ended happily for the Markandeya Coop members. The project showed everyone that it was possible for a poor community and its grassroots and NGO supporters to work in partnership to make a complex slum redevelopment project happen, even under a series of large, top-down government programs. The evolving role of the Alliance was to provide a flexible, responsive bridge between the needs of the cooperative society and the government perception of those needs while negotiating workable solutions.

FOR MORE INFORMATION

This case study was written in July 2020 by Indu Agarwal and Sheela Patel at SPARC in Mumbai.

Please follow these links to read more about the Markandeya project:

- 1992 SPARC Housing Finance paper for HI workshop <https://www.sparcindia.org/pdf/articles/1992-SPARC-Housing-Finance-paper-for-HI-workshop.pdf> .
- 2001 Institutional Pluralism and Housing Delivery: A Case of Unforeseen Conflicts in Mumbai, India, Bishwapriya Sanyal, Vinit Mukhija, World Development Vol. 29, No. 12, pp. 2043-2057, 2001 <http://web.mit.edu/sanyal/www/articles/InstPluralism.pdf>
- 1986 Enumeration as a tool for Mobilisation: The community census of structures in Dharavi <https://www.sparcindia.org/pdf/articles/enumerations.pdf>
- 1993 Markandeya Housing case study <https://www.sparcindia.org/pdf/articles/1990MarkandeyaCaseStudy.pdf>
- 1995 SPARC and its work with the National Slum Dwellers Federation <https://www.sparcindia.org/pdf/articles/alliance.pdf>
- 2001 Upgrading Housing Settlements in Developing Countries, The Impact of Existing Physical Conditions, Vinit Mukhija, *Cities*, Vol. 18, No. 4, pp. 213–222, 2001 <http://210.74.184.3:8080/international/case/case/1363.pdf>
- 2014 Overview of Slum Rehabilitation Schemes in Mumbai, Jagdale <https://repositories.lib.utexas.edu/bitstream/handle/2152/26620/JAGDALE-MASTERSREPORT-2014.pdf?sequence=1>

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PHOTOS



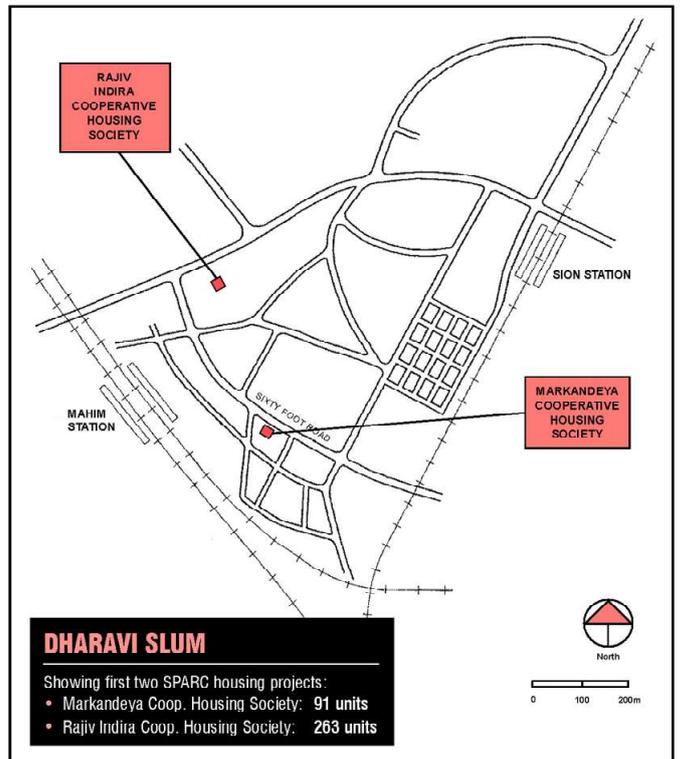
Looking out over rooftops in the part of the sprawling Dharavi slum where the Markandeya Cooperative Housing Society was built.



Dharavi's small lanes can be much narrower than this one, but this gives a good idea of how much life is squeezed into very small spaces.



In the frame of this photo, you are looking at five or six separate dwellings, above and below - all filled to the brim with families and activity.



Here is a schematic map of Dharavi, showing the site of the Markandeya Cooperative, on the major 60-Foot Road that crosses the slum.

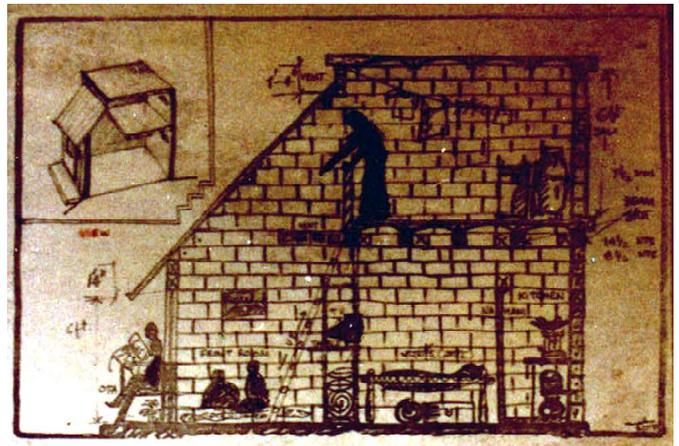


The Dharavi Vikas Samiti is a federation which brings together many of the small, discrete communities that form Dharavi's social patchwork.





For the millions who live crowded in very small space in slums like this, the only way to expand living space is by going up, in lofts and second floors.



This historic sketch of a modest 14-foot tall house, with an internal half loft, was made by one of the Mahila Milan footpath dwellers.



The Mahila Milan made many model house exhibitions like this one to show their housing ideas, which often included lofts and second floors to expand living space in very small houses.

A brochure from an October 1995 campaign by Mahila Milan to legalize 14-foot ceiling heights in slums in Pune, Mumbai and the rest of the state.

A HOUSE 14 FEET TALL

A PUBLIC DISCUSSION ABOUT 14-FOOT CEILING HEIGHTS IN PUNE SLUMS

Organized by Shelter Associates, 5 October, 1995
Ranchandrade Sabha Mandap, Ghole Road, Pune

WHY IS 14-FEET IMPORTANT? If you and your family live crowded into a space barely ten feet by ten feet, with common walls on three sides, as many slum dwellers do, the only way to expand your living space is by going up. Taller houses with interior lofts and 14-foot ceiling heights give you about seven feet of reasonable standing-room upstairs AND downstairs. They make room for children to study, undisturbed by the family.

THE SOLUTION IS ALREADY THERE. Half of Pune's population stays in slums and makes its own shelter within extreme constraints of budget and space. 14-foot houses allow families a little more room. They can build lofts themselves, using stone tiles or planks laid over simple joists of wood or steel. 14-foot houses are seen all over, in a thousand variations, with internal stairs, with little balconies draped with colourful saris hung out to dry, and flowers in pots.

WHAT IS ALLOWED? Attitudes towards buildings in slums have gone through many changes. Regulations have come and gone which tried to regulate a shelter-process which is by nature "irregular" and shaped purely by need and by lack of alternatives. The State originally defined "allowable" hutments as having no foundations, no concrete pillars, no lofts, and limited verandahs to heights of 9, 10, or 11 feet. Now the difference between 11-foot and 14-foot might seem unimportant, but to somebody whose space is measured in inches, those three feet make all the difference in the world.

14-FEET IN BOMBAY: In 1990, the National Slum Dwellers Federation (NSDF), Mahila Milan (MM) and SPARC used the Maharashtra Cooperative Housing Society (a slum redevelopment project for 92 families in Dharavi) as the focus of a vigorous campaign to legalize 14-foot ceiling heights in Maharashtra slums. A 14-foot model house with loft, designed by the MM in 1986, formed the basis for the 4-story Maharashtra design. The campaign included model house exhibitions, press reports, scholarly articles, sit-ins at the MCGD and intense lobbying. The campaign was successful, and in 1990, the Development Control Rules were amended to allow 14-foot ceiling heights with half-lofts, and to allow existing 14-foot houses to be "regularized". In 1991, the Ministry of Urban Development followed up by issuing Government Resolution No. GVS 1091/2897/K7, which made 14-foot heights allowable in slums.

PEOPLE'S SOLUTIONS CAN WORK. There are still questions about the "allowability" of 14-foot houses in Pune slums. MM recently built two demonstration houses (14-foot tall) in Bhirnagar, a Pune slum in Vishrantwadi, which brought up the 14-foot issue in Pune. The discussion today, while specifically about the issue of 14-foot houses, is organized to open up a dialogue between the officials who administer rules and the people who are affected by them. The problem of housing in Indian cities is too great to ignore the solutions poor people create for themselves. 14-foot houses are a people's solution to living in crowded conditions. In its role as "enabler" rather than "provider" of housing to the poor, the Government now has the chance to support such solutions.

SIMPLE MATH:

$$\begin{matrix} 7 \\ + 7 \\ \hline = 14 \end{matrix}$$

- SENSIBLE
- SAFE
- NECESSARY

PROGRAMME:

10:30 Welcome, Introduction and Inauguration.
11:30 Tea-break
11:45 Slide Show and dialogue
1:30 Lunch
2:00 Discussion
3:30 Tea Break
3:45 Pat-cap and Closing Words

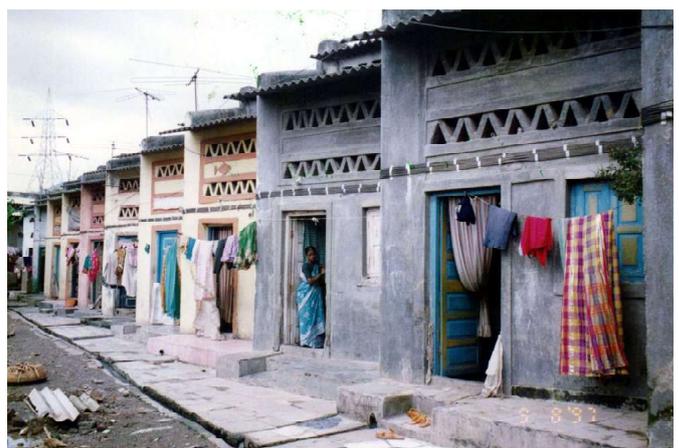
CONTACT:

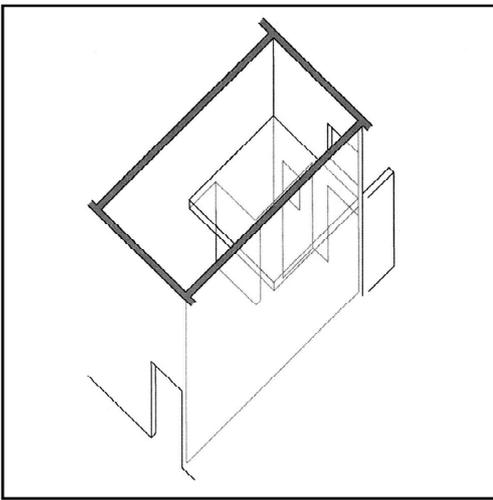
- National Slum Dwellers Federation (NSDF)
- Mahila Milan (Pune)
- Shelter Associates, P.O.Box 887, Deccan Gymkhana, Pune 411004
Tel: (0212) 335821 / 673523



The Adarsh Nagar Cooperative Housing Society, in Dindoshi, in Mumbai, in 1986, was the Mahila Milan's first chance to develop their 14-foot house model into a project.

The much-visited Jan Kalyan Cooperative Housing Society in Mumbai, in 1990, was their second housing project and a refinement of their 14-foot model house with internal loft.

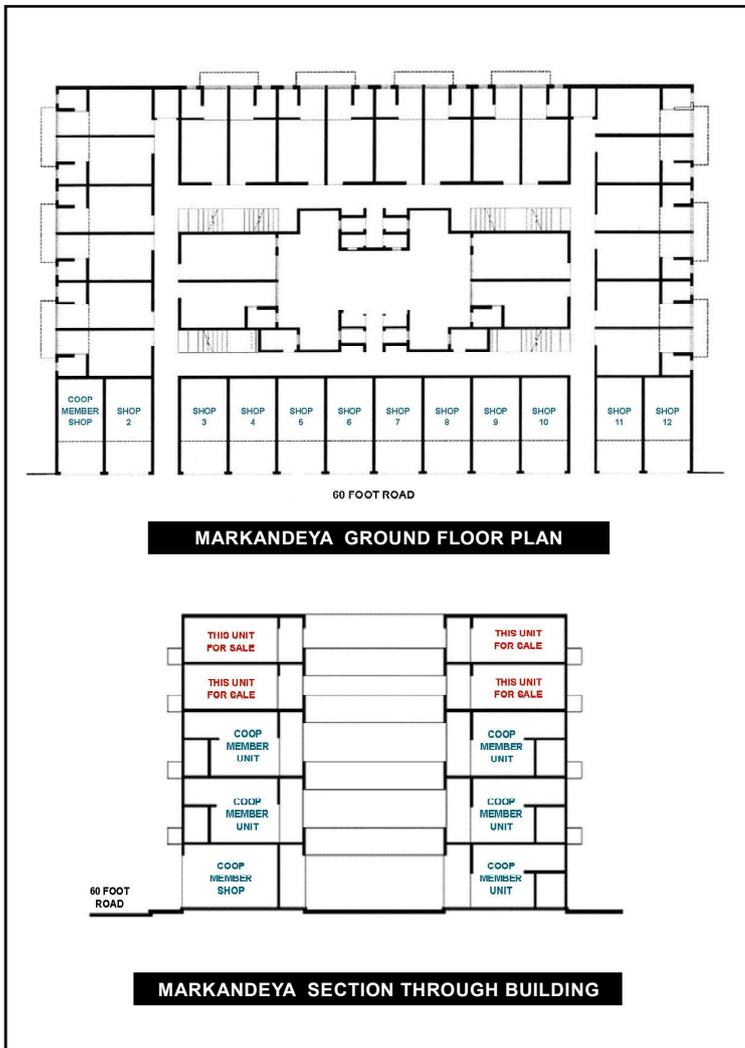




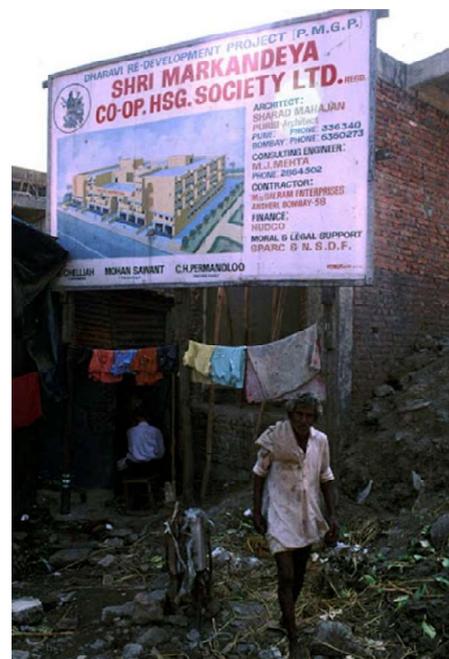
▲ This is the architect's drawing of the 14-foot tall unit, with internal loft, which was stacked up in a 4-story building in Markandeya for the first time.



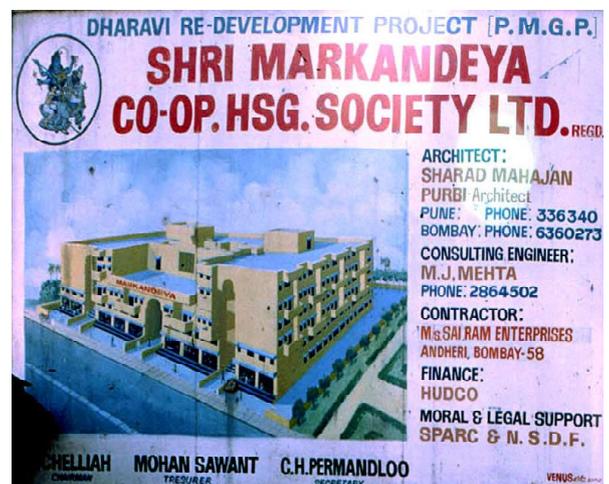
▲ Some of the community women looking at how the small apartments can be arranged in the building, during a community design workshop.



▲ On the top is the plan for the ground floor of the Markandeya Cooperative Housing Society, with a row of 12 shops along the front (owned and run by coop members) and apartments arranged around internal light-wells behind. Below is a section through the building, showing the 14-foot units with lofts for coop members on the first three floors, and more conventional units for sale on the top two floors.

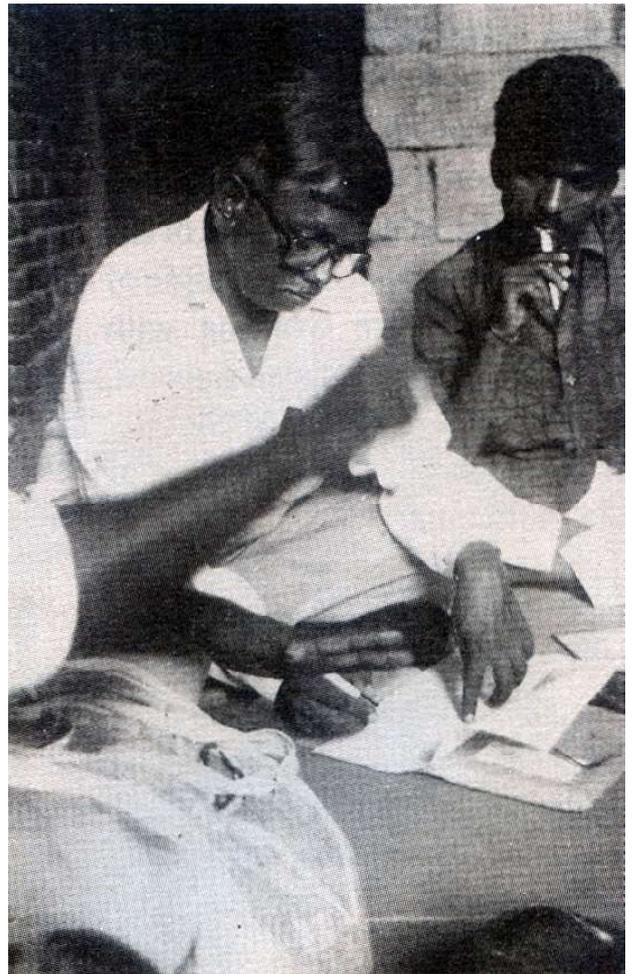
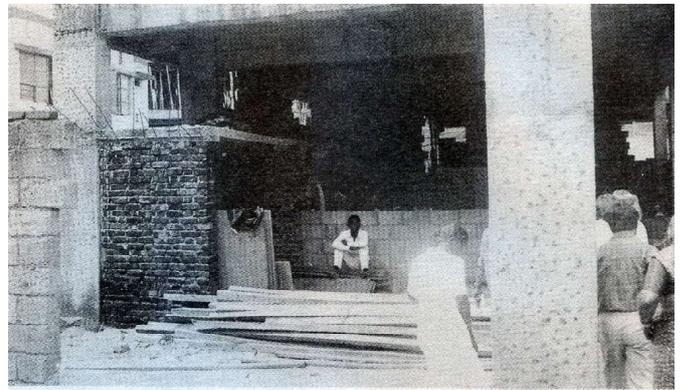


▲ When the project was finally approved, up went a sign to let everyone in the area know what was coming.



▲ Sign painters often moonlight as Hindi film poster artists, and that shows in this slightly glamorized version of Markandeya on the sign.

▶ A rather grainy photo of Chelliah, the intrepid chairman of the Markandeya Cooperative. Here he is in October 1993, during the early stage of the construction, telling a group of visiting slum dwellers from Pune about the project.



▶ Most of the photos documenting the Markandeya project were spoiled when one of Mumbai's terrible floods reached the SPARC office, but these photos were printed in the November 1993 Citywatch newsletter, and so survived - in somewhat grainy form.



▶ This photo was taken when the coop's 92 apartment and shop units were completed and the for-sale units on top were still under construction.



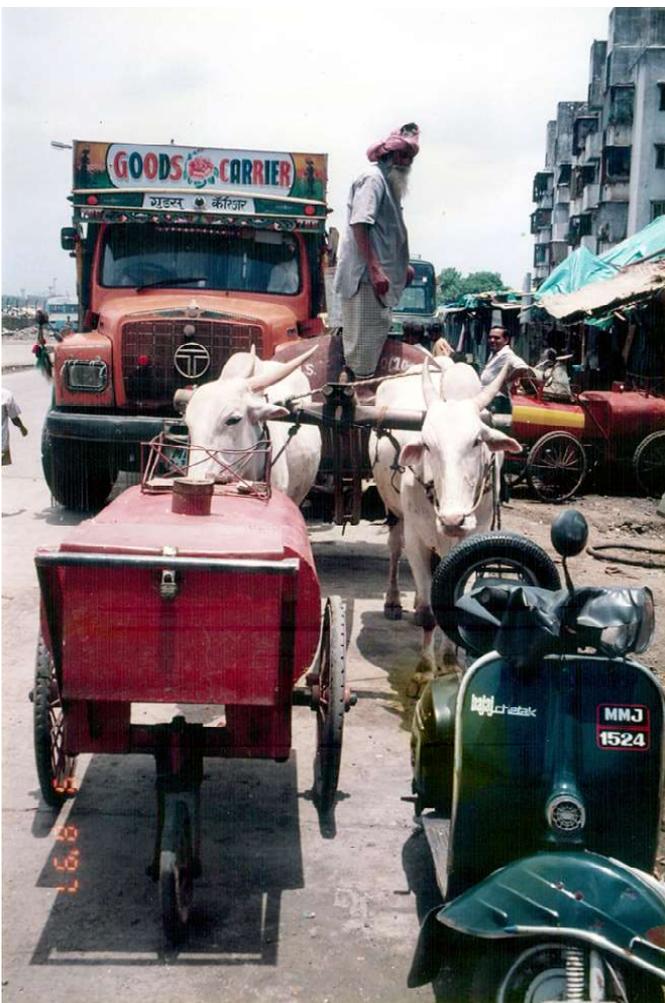
▶ There is the same front of the building a little later, when the for-sale units on the top two floors were a little farther along.



▲ The building almost ready for people to move in. A few coop member families on the ground floor have already taken possession of their shops.



▲ There is Chelliah, the Markandeya Cooperative's Chairman, talking with his colleagues in the Dharavi Vikas Samiti in front of the newly-completed building, with many of the shop fronts already open for business.



▲ This is right in front of the new building, on the 60-Foot Road, which crosses Dharavi and is full of all sorts of traffic and vehicles - both animal and mineral.



▲ The first coat of whitewash to the facade of the new building - a white that is destined to get moldy and grimy in Mumbai's polluted, humid air.



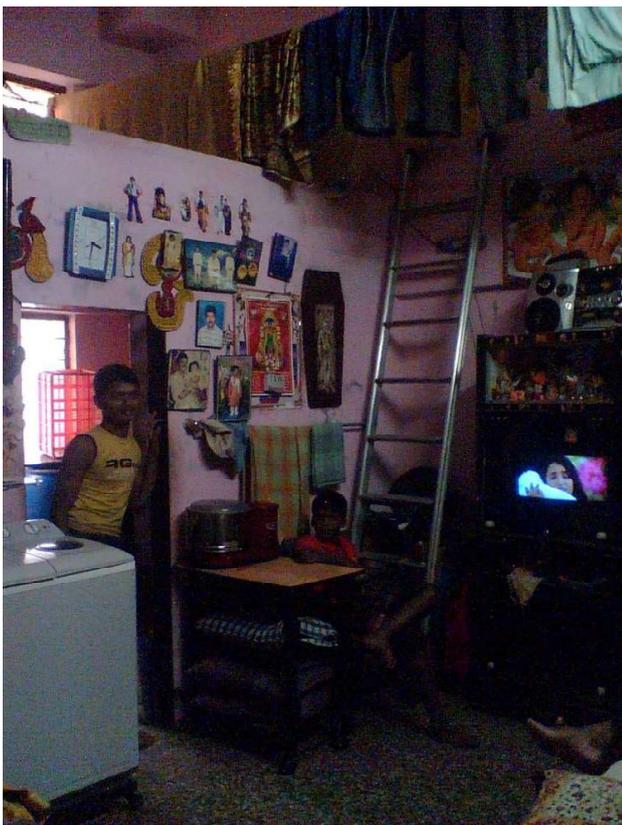
Two more shots of the front of the Markandeya Cooperative Housing Society building, a short time after the coop members began moving in, but before the for-sale units at the top of the building had been completed by the developer and sold on the open market.



Here coop members follow the long Mumbai tradition of putting up grilles and awnings around balconies, to let the air in and keep the rain out, but make room for hanging out the wash to dry.



This is a photo of one of the wide hallways on the upper floors, with fresh air and daylight coming in from the internal courtyards and through the grilles above the doors. The hallways were designed to be wide enough to give people space to sit chatting and peeling vegetables, and for kids to play near home.



In lieu of an internal photo of one of Markandeya's apartments, this photo shows one of the identical 14-foot apartments, with internal loft, in the Rajiv Indira Cooperative Housing Society - a later Alliance housing project just down the road.