

Post-Earthquake Housing Recovery in Bachhau, India: The Homeowner, the Renter, and the Squatter

Anuradha Mukherji^{a)}

This paper looks at post-earthquake housing recovery in Bachhau, a town close to the epicenter of the 2001 Gujarat earthquake in western India. This research examines the difference in housing recovery outcomes among homeowners, squatters, and renters in Bachhau, in order to understand why single-family homeowners and squatters were able to rebuild and improve their housing conditions whereas low-income renters continued to struggle toward housing recovery. This paper shows that communities in Bachhau did not have the resources or capacities to rebuild themselves and that appropriate public assistance was critical for housing recovery. While public assistance was mainly targeted to meet the needs of homeowners, local government officials in Bachhau pursued a squatter housing recovery program crafted to meet the needs of low-income squatters. In contrast, public policy failed to understand the needs of renter households, resulting in their marginalization from the housing recovery process in Bachhau. [DOI: 10.1193/1.3474646]

INTRODUCTION

On 26 January 2001, a M_w 7.7 earthquake hit the state of Gujarat in western India (EERI 2001). The earthquake—with an epicenter in Kutch district (Indian districts are equivalent to counties in the United States), a little-known, remote region near the Pakistan border—killed more than 20,000 people. The earthquake also flattened about 230,000 houses and damaged another 1 million units (GSDMA 2004). This paper looks at post-earthquake housing recovery in Bachhau, a town close to the epicenter of the Gujarat earthquake.

Research in the hazards field points out that post-disaster housing recovery often fails to understand the needs of vulnerable groups (Blaikie et al. 1994) and gives the highest priority for housing reconstruction to upper-income groups with land and property and lowest priority to such groups as low-income renters or squatters (Freeman 2004, Comerio 1998, Oliver-Smith 1990). In Bachhau, the earthquake destroyed single-family housing, squatter settlements, and renter apartments, and public and private housing reconstruction programs were introduced to help people rebuild their homes. Five years after the earthquake, homeowners and squatters have been able to rebuild their houses in Bachhau, yet many renters could not achieve even pre-disaster housing standards. This research examines the difference in housing recovery outcomes among homeowners, squatters, and renters in Bachhau. In doing so, it aims to understand why

^{a)} Assistant Professor, Urban and Regional Planning, East Carolina University, Greenville, NC

single-family homeowners and squatters were able to rebuild and improve their housing conditions whereas low-income renters continued to struggle toward housing recovery. This paper will provide a deeper understanding of the impact of public programs, private interventions, and community initiatives on housing recovery outcomes. Through its findings, this paper expects to contribute to future public policy debates on post-disaster housing recovery in India and beyond.

Hazard researchers agree that post-disaster recovery does not happen evenly across a population, and they emphasize four main points to consider when looking at the difference in housing recovery levels after disasters. First, personal or community assets—cash, savings, land, livestock, knowledge, health, and kinship networks—play a central role in the housing recovery of households and communities. The more assets people have, the less vulnerable they are to long-term negative impacts of a disaster and are better able to cope with and rebuild after a disaster (Vatsa 2004, Blaikie et al. 1994, Bolin and Stanford 1998, 1991). Second, the internal and external capacities of a community prior to a disaster are important in determining the post-disaster housing recovery levels of a community. Internal capacity can help a community to organize well and participate in the local decision-making processes. External capacities can help the community to expand its economic or material resources through its larger social and economic links during post-disaster housing recovery (Siembieda 2002, Berke et al. 1993). Third, it is important to recognize that within a community, such issues as class, caste, ethnicity, gender, age, and health often influence access to resources like stable employment, types of income, savings, education levels, and ties to local institutions (Enarson and Morrow 1998, Blaikie et al. 1994, Oliver-Smith 1990). This influences housing recovery outcomes as well. Finally, the difference in the levels and rates of housing recovery not only depend upon a community's or household's own resources, its internal-external capacities, or its social class and ethnicity, but also on appropriate recovery assistance programs (Berke and Beatley 1997, Bates and Peacock 1993, Anderson and Woodrow 1989, Bates et al. 1984).

It is within the context of this last point that this study is situated. Freeman (2004) notes that post-disaster financial aid policies and programs are usually based on housing loss. As owners of existing housing stock, the middle and upper classes capture assistance that rebuilds pre-existing housing stocks, while low-income groups, such as renters or squatters who do not own housing, cannot access housing assistance. This often exacerbates socioeconomic inequalities and hinders equitable housing recovery for all socioeconomic groups (Oliver-Smith 1990). Yet in contrast to Freeman (2004) and Oliver-Smith's (1990) arguments and unique to India, along with middle-class homeowners, squatter communities in Bachhau also had access to public housing recovery funds; for this reason, Bachhau was selected as the research site for this study. By looking at a site where both homeowners and squatters were eligible for public assistance, the objective of this paper is to investigate this question: Apart from its own resources or aid from NGOs, how did a community's access to and use of government assistance programs impact final housing recovery outcomes in Bachhau?

This paper looks at housing recovery within 18 caste-based communities in Bachhau. Communities were identified based on their caste because field observations

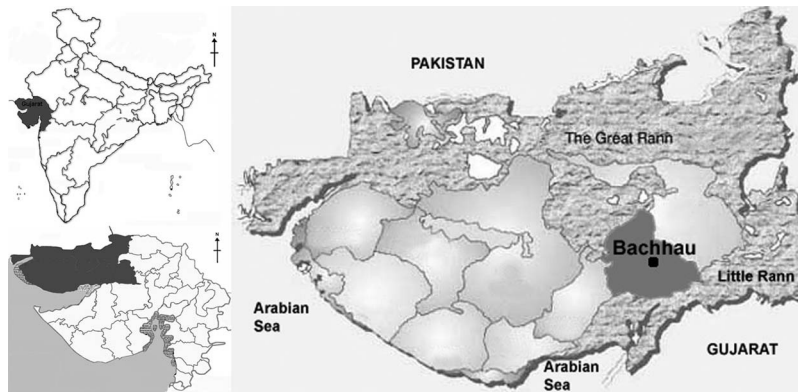


Figure 1. Maps on the left show location of the state of Gujarat in India (top left) and Kutch district in Gujarat (bottom left). The enlarged map of Kutch district on the right shows the location of Bachhau. (Source: Base maps from www.mapsofindia.com)

showed that rather than spatial proximity, households in Bachhau define their sense of group and community identity based on their caste affiliation. The research draws primarily upon in-depth field interviews with the caste-based communities. One or two leaders were identified for each community, and interviews lasting from half hour to one hour were conducted with each person. The primary community data is supported with information obtained from key interviews with local government officials and NGOs.

This paper examines the impact of community initiatives, private NGO interventions, and public housing assistance programs on final housing recovery outcomes in Bachhau. Examining community-based initiatives for housing recovery helped understand how community resources and assets and a community's internal and external capacities impacted the ability of homeowners, renters, and squatters within the community to rebuild after the earthquake. Looking at NGO interventions and public assistance provided insight into how external programs impacted housing recovery among homeowners, renters, and squatters.

BACHHAU: COMMUNITY-BASED HOUSING STATUS

Bachhau, a town with a population of over 25,000 (Census of India 2001), is located in eastern Kutch district in the state of Gujarat (see Figure 1). Since the 1980s, Bachhau has grown from a village governed by a village council to a rapidly expanding town administered by a municipality. Essentially a trading center for surrounding villages, the increased rail and road connectivity and Bachhau's proximity to the port of Kandla (the second largest in India) has attracted such industries as ceramics and salt processing and led to the town's growth. Prior to the earthquake, the growing economic activity contributed to a continuous influx of new migrants from neighboring villages in search of work opportunities. The resulting rise in population produced a boom in Bachhau's housing market, with prices rapidly rising for single-family and rental housing. The high

land and housing prices, however, locked the urban poor out of the formal housing market and instead led to a rapid expansion of informal housing through squatter settlements in and around Bachhau. The increasing land costs especially impacted renter recovery in Bachhau and is discussed further in this paper.

Bachhau lost most of its housing infrastructure during the 2001 earthquake. According to the post-earthquake housing damage survey conducted by the Gujarat government, Bachhau contained more than 13,000 buildings, of which 10,000 were residential homes. This means that housing accounted for nearly 75% of the built structures in Bachhau. But with more than 9,000 homes destroyed, Bachhau lost nearly 90% of its housing stock, half of which were squatter housing. The remaining 10% of homes suffered heavy damage and were rendered uninhabitable. The scale of damage was attributed primarily to the poor quality of housing construction and the age of buildings.

The Gujarat state government used the pre-disaster housing status of a household as a basis to decide the amount of post-disaster financial compensation the household was eligible for. Households made up of homeowners had better chances of receiving adequate financial aid based on their property titles, as opposed to renters and squatters who could not produce property titles. The government offered some public assistance to rebuild rental housing. However, because of rising land prices, rental property owners were not interested in receiving public assistance to rebuild their properties and instead wanted to use their land for real estate development. For squatter housing recovery, a unique program was developed in Bachhau, in which squatters with land tenure were eligible for some public assistance. Land tenure, called *Sanad*, is a type of tenancy title by which the state confers the right of occupancy to a squatter on a piece of public land. The title is nontransferable, which means the land cannot be sold to a third party.

Yet not all squatters in Bachhau had land tenure. The poorest squatters from religious minority communities or tribal communities have found it difficult to get land tenure. This is because prior to 1990, households from communities that are highly aware of and involved in local politics, and who were successful in having local political representation from their communities at the village level and later at the municipal governing body, had a better chance to apply for and receive land tenure. Indeed, low-caste communities like the Dalits or tribes like the Rabari, who are politically well represented, mostly have land tenure. Yet tribes like the Koli, Bhil, and Vaghri and some minority Muslim communities with weak political connections have not had the local political support that would push their land tenure cases. Moreover, once Bachhau was designated as a small sized urban area in the early 1990s, land tenure decisions shifted from the local to the district level under the District Collector's Office, which stopped reviewing tenure cases or issuing land tenure. This is because district-level public officials appointed by the state government are not involved in local politics, which makes them usually less sympathetic to local land tenure issues and less inclined to consider tenure cases or issue tenure on public land. As a result, after 1990, households that arrived and settled in the squatter areas of Bachhau, regardless of their religious, tribal, or caste affiliation, have not been able to get tenure.

Overall, while there was no visible discrimination in post-disaster recovery assis-

Table 1. Housing status of 18 communities in Bachhau, Kutch district, Gujarat, India (Source: Field interview data. Note: The figures below are approximate values.)

Housing Category	Caste-Based Community	Total House hold	Pre-Disaster Housing Status (In percentage and Number)			
			Home Owner	Renter	Squatter	
					With Tenure	No Tenure
High Home Ownership	Thakkar	450	80% (360)	10% (45)		10% (45)
	Patel-Leva	400	96% (384)	2% (8)	2% (8)	
	Jain-Vania	190	100% (190)			
	Maharaj	170	98% (166)		2% (4)	
	Jain-Oswal	125	100% (125)			
	Darbar	100	70% (70)	30% (30)		
Low Home Ownership	Khatri Muslim	40	90% (36)		10% (4)	
	Prajapati	300	30% (90)	8% (24)	50% (150)	12% (36)
	Suthar	200	50% (100)		30% (60)	20% (40)
No Home Ownership	Soni	110	50% (55)	50% (55)		
	Muslim General	900			20% (180)	80% (720)
	Dalit	450			70% (315)	30% (135)
	Koli	450			30% (135)	70% (315)
	Rabari	400			80% (320)	20% (80)
	Bhil	350			10% (35)	90% (315)
	Vadi	216			20% (43)	80% (173)
Khawas Rajput	100			70% (70)	30% (30)	
Vaghri	70				100% (70)	

tance based on religious, caste, or tribal affiliation, the property rights of a household—being a homeowner, possessing land tenure, lacking property title—were used by the state to differentiate among households and decide their eligibility for public assistance. This paper pays particular attention to the housing status of communities prior to the earthquake.

The earthquake impacted single-family houses, low-rise renter apartments, and squatter units, rendering homeowners, renters, and squatters equally homeless. With the percentage of damage so high, there were no houses available for people to rent as temporary shelters. Most homeowner households left town to stay with friends and family in other places. Renters, who had lower incomes and hence lower capacity for mobility, stayed in Bachhau in makeshift shelters. Squatters, particularly those without land tenure, were concerned about losing their land and refused to move from the squatter plots.

Based on field interview data, Table 1 provides the housing status of 18 communities in Bachhau. The communities were identified based on their caste identity, since Bachhau is socioeconomically structured along caste-based community lines. Caste structures are stronger in small towns like Bachhau and medium-sized urban areas in India com-

pared to larger urban metropolitan regions. In Bachhau, rather than spatial proximity, people identify their community based on their caste or sect affiliation, and each household forms social and economic networks within its own caste or sect. Within each caste-based community, however, the economic position of individual households can vary greatly. For example, in the Thakkar caste community, about 80% of households are homeowners, most of whom own land, businesses, and other properties, while 10% are low-income renters. Caste played an important role during post-disaster housing recovery in Bachhau. Communities used their caste-based networks to lobby their own communities at the larger national level to arrange for financial or material assistance for members of their own group.

Data on the housing status of each caste community is crucial because housing in Bachhau is a key indicator of the overall social and economic position of a community. In turn, it is one of the main reasons for difference in post-disaster housing recovery outcomes. For example, in wealthier caste communities like Thakkar and Jain, the percentage of homeowners is significantly higher than economically weak communities like the Prajapati, who have a higher percentage of squatters or renters, or the Dalit community where all households are squatters.

Table 1 broadly groups the caste-based communities in Bachhau into three categories based on homeownership status. The first homeownership category encompasses the caste-based communities of Maharaj, Darbar, Patel, Thakkar, Jain Vania, Jain Oswal, and Khatri Muslim. In these communities, more than 50% of households are homeowners with formal title to property and as such, are grouped as high homeownership communities. The high-homeownership communities are socially and economically the strongest in Bachhau, with a median income range of 5,000 to 10,000 rupees per month, or \$119 to \$238, respectively (all currency is in Indian rupees and U.S. dollars; the exchange rate in 2005 during fieldwork is used: \$1=42 rupees). The second category includes the communities of Soni, Suthar, and Prajapati who have homeownership at 50% or less and have been grouped as low-homeownership communities. The median income within the three communities is around 3,000 rupees per month (\$71). The final category is communities with no homeownership and includes Dalits, Khawas Rajput, Muslims, and the tribes of Rabari, Bhil, Koli, Vadi and Vaghri. These communities cannot afford to buy or rent a home in the formal housing market. Instead, they look for options within informal settlements by squatting on public land or renting space from other squatters. The monthly median earning of households in this group hovers between 1,000 to 2,000 rupees (\$23 to \$47).

HOUSING RECOVERY: HOMEOWNERS, RENTERS, AND SQUATTERS

Within months following the earthquake, various initiatives were launched for temporary shelter and permanent housing reconstruction in Bachhau; these initiatives can be grouped into community activities, private NGO interventions, and public government programs, each having a different focus and approach to housing recovery. For instance, communities focused on the needs of their own member households; NGO work was targeted toward low-income renters and squatters, whereas government programs were geared toward homeowners. This section looks at the impact of community initiatives,

NGO aid, and public programs on housing recovery among homeowners, renters, and squatters in Bachhau. This section is based on data from in-depth field interviews conducted with 18 caste-based communities in Bachhau.

HOMEOWNERS

Homeowners in Bachhau were largely successful in rebuilding their houses after the 2001 earthquake. Though most homeowner households had access to multiple sources of financial and material assistance for rebuilding their houses, public housing assistance played a critical role in shaping final housing recovery outcomes among homeowners.

The first source of assistance for homeowners was from within their communities. Homeowners in Bachhau are largely from socioeconomically strong communities, where a majority of its member households are made up of professionals who work in the construction industry, work in banks, have administrative positions in the government, own medium or large businesses, and sit on boards of various trusts and foundations. In other words, most homeowners in Bachhau belong to caste-based communities that are not only economically robust but also have strong networks with their larger caste community at the national and international levels. After the earthquake, the socioeconomically strong communities, with organized and well-funded, highly active community councils, were successful in raising recovery funds through their professional ties, business links, and their association with various trusts and foundations. It is important to note, however, that while these funds helped the communities during the initial months after the earthquake, primarily for temporary shelters, most communities could not extend their fundraising efforts toward permanent housing reconstruction. Though communities were able to raise smaller amounts of money to help their member households with temporary shelters or emergency cash, most communities did not have the internal capacity or organization and the strong external links to well-funded groups that could bring in the larger amounts needed to fund housing reconstruction.

Moreover, not all homeowners belonged to socioeconomically strong communities. A smaller number of homeowners were from low-income groups, in which the community lacked the financial resources or social networks to initiate any fund raising activity for housing recovery. For the most part, homeowners from all communities had to look for housing recovery assistance beyond their communities in order to rebuild their houses.

For a majority of homeowners, this was not a problem. The Gujarat state government's public policy for housing recovery was favorable to homeowners because financial assistance was targeted to households who had title to the residential property they occupied during the earthquake. Homeowners who had legal title to their residence were assured of public financial assistance for housing recovery. Financial assistance to homeowners was based on the housing damage assessed by state government survey teams. The survey teams categorized housing damage into five groups, from G1 to G5, with G1 for houses with minor cracks and G5 being complete collapse. For single-family houses and apartment units in the G5 category, the Gujarat government set the financial compensation amount at the rate of 3,000 rupees (\$71) for every square meter of built-up

area, with a maximum limit of 50 square meters eligible for assistance. Public financial assistance for homeowners thus ranged from 8,000 rupees (\$188) for houses in the G1 category to 150,000 rupees (\$3,529) for houses in the G5 category.

There was another element to the state government's financial assistance; it conceptualized its housing recovery program as owner-driven reconstruction. Homeowners would have direct control and supervision over construction of their houses, with local artisans, building contractors, or contract laborers doing the actual building work. What this meant was that while laying out certain seismic safety guidelines, the state government's policy gave homeowners the freedom to choose how to build, who to give the construction contract to, and to design the new house according to their individual needs. While this gave homeowners control over the housing design, quality of building materials, and the actual construction, it also gave them the flexibility to pool public funds with their own personal savings to build better-quality houses.

Yet low-income homeowners in Bachhau faced difficulties in accessing public financial assistance. This is because public funds for housing reconstruction to homeowners were released in three installments. Homeowners had to complete construction of the housing foundation with funds from their first installment in order to be eligible for the second housing installment. But homeowners could not begin rebuilding immediately upon receiving their first installment of public assistance because they could not get building permits. Indeed, while the state government released the first installment within six months following the earthquake, it took the government almost two years to issue building permits. Because the Gujarat government had decided to design and implement new citywide urban redevelopment plans for Bachhau, without the new plans in place, the government could not give building permits that would allow homeowners to begin housing construction.

The realization that homeowners would not be able to begin construction immediately with the first installment of public assistance created considerable tension between the State and local homeowners. The government had decided to implement the new urban redevelopment plans within a year's timeframe, following which building permits would be issued to property owners. The plans, however, took almost two years to implement. A small number of wealthy households, in areas located north of the destroyed urban core of Bachhau, began construction of their houses without waiting for the implementation of the redevelopment plans. Yet such attempts were few, and the government tried to control them through administrative and legal mechanisms. Though highly critical of the government and frustrated by the long wait to get building permits, the majority of homeowners believed that they had no alternative but to wait. This is because: 1) relocation was not an option—that is, homeowners did not want to abandon their ancestral housing plots, immediate neighborhoods, and their larger community situated within the urban redevelopment areas, to relocate and build elsewhere on another plot—2) homeowners did not want to forgo their eligibility for the second and third installments of public assistance by building without permits on their current plots, and 3) the earthquake had killed people who were trapped in narrow, densely packed lanes and streets in the urban core as buildings collapsed on top of them, and most people supported the government's decision to widen roads for seismic safety as part of

its urban redevelopment plans. So while many did not agree with the amount of time being spent on the planning and implementation of the redevelopment, they did see some value in it and wanted to wait for its completion.

By the time building permits were issued, however, most homeowners had spent the funds from their first installment of public assistance on other expenses, such as emergency medical treatment, and did not have the financial resources to complete the first stage of rebuilding. Wealthy households dipped into their savings or had sufficient collateral to be eligible for a bank loan or other credit. But most homeowners did not have access to alternative funding sources and struggled to complete construction of the housing foundation to be eligible for their second installment. There are numerous instances where money ran out in the middle of construction and the homeowner did not have other financial options to complete the work. Several low-income homeowners, having spent their first housing installment elsewhere, could not complete the required amount of construction that would make them eligible for the second and third housing installments.

Overall, homeowners in Bachhau largely benefited from government programs, which was crucial to their housing recovery. At the same time, however, it is important to note that public assistance was especially favorable to upper-income homeowners. Homeowners who had either the personal resources to meet their post-disaster emergency expenses without having to use the first installment of public assistance funds or sufficient assets to qualify for a bank loan or other credit could offset any funding shortages and meet the eligibility guidelines for the second housing installment. But public assistance was not as effective in helping low-income homeowners; many low-income households, having spent their first installments on immediate expenses after the earthquake, did not have the financial capacity to meet the eligibility requirements for consecutive public assistance installments.

RENTERS

While homeowners in Bachhau were largely successful in recovering from the 2001 earthquake, the same is not true for renters. Long-term renter households in Bachhau shared similar characteristics. First, most renters were low-income households. Second, a majority of the renters had been living for more than 15 to 20 years in rent-controlled houses or apartments and were paying extremely low rents; and third, most did not have enough funds to build their own house. Rental households also faced continuing pressure from their landlords who wanted their properties back to sell it in the booming real estate market. Nevertheless, because of the renter household aspects mentioned above, renters were unwilling to move out of rent-controlled apartments.

During the initial months following the earthquake, renter households received some support from their caste-based communities for temporary shelters. Yet renters could not rely on community resources to garner financial or material aid for permanent housing recovery because a large number of renters in Bachhau were not only low-income house-

holds, but belonged to communities with limited means and resources. This meant public assistance was an important component among renter households for housing recovery.

The Gujarat state government's policy for renter housing recovery did not include giving financial assistance directly to renter households. Instead, the policy stated that a landlord could receive housing recovery assistance if he was willing to use the money to rebuild and re-rent the new house to the same tenant. This policy approach had crucial flaws because it did not recognize the conflict of interest between the landlords and their tenants. Most renter households had been living in rented properties for more than 20 years and were paying extremely low rents due to rent-control laws. In the meantime, land prices in Bachhau had steadily soared and were at an all-time high in the 1990s. Most landlords wanted their tenants to vacate their properties prior to the 2001 earthquake, but under the state law, though landlords retain title to the land, long-term tenants develop ownership rights to the house, and it was not easy to remove them legally.

The earthquake changed everything; with the house wiped out, only the land remained. The land belonged to the landlords, and the landlords were not interested in receiving joint compensation on behalf of tenants or rebuilding the house to rehabilitate the tenant. Moreover, renters had to produce documents such as an electricity bill, water bill, ration card, property papers, or rent receipts to apply for financial compensation. Because the tenant-landlord relationship in Bachhau was not formalized, most landlords did not issue rent receipts. Without these receipts, renters found it difficult to establish their renter status and get their joint-compensation claims approved. The state government policy essentially left renters at the mercy of their landlords. Since landlords wanted to use their land for real estate development, the policy created a situation that was not conducive to renter housing recovery. From the State's perspective, giving landlords control over their legally owned properties was perhaps the correct policy approach. At the same time, however, low-income renter households in Bachhau clearly needed some form of assistance or intervention to be able to recover after the earthquake.

Left to fend for themselves, renter households in Bachhau approached NGOs like the Lions Club and the Rotary Club, which had indicated a willingness to help renters for housing assistance. However, two factors prevented most renters from obtaining NGO aid in Bachhau. First, the Lions and Rotary Clubs in Bachhau were like independent contractors who generated funds through their international networks to rapidly construct mass housing units and hand them to eligible applicants, but their process of selecting applicants for their housing units was highly opaque, requiring each member of the club to nominate two to three housing applicants for their club's project. This meant that unless a renter had contacts with a club member, he or she had no chance of being nominated for a housing unit in a NGO housing project. The nomination process put low-income renters at a disadvantage because the majority of club members were from high-income communities who in turn nominated their friends and relatives from the same communities. As a result, most of the applicants in the Lions and Rotary housing projects were not necessarily in need of housing, but rather were middle-class households who already had a house and could acquire a second house through their contacts

with club members. Second, to be eligible for a housing unit, applicants had to pay the house plot price. In the Lions project, they also had to share the construction costs. These were expenses that most renters could not afford.

Overall, while it is clear that low-income renters in Bachhau needed some form of assistance to be able to rebuild after the earthquake, the lack of appropriate public assistance, combined with inadequate private NGO support, ensured that renters in Bachhau largely failed to achieve housing recovery. Indeed, many former long-term renters in Bachhau became squatters on public land after the earthquake.

SQUATTERS

In Bachhau, unlike other towns affected by the disaster, a public assistance program for squatters, with support from Unnati, a local NGO, enabled squatter communities to rebuild their houses. Of a total of about 10,000 residential buildings in Bachhau prior to the earthquake, more than 40% was made up of squatter housing. This meant that Bachhau had about 4,000 squatter housing units. But with 90% of all residential buildings destroyed and rest 10% damaged beyond repair, squatter housing in the town was largely wiped out.

Squatters in Bachhau are low-income households, surviving on daily wage jobs, and belong to communities with extremely limited resources. These households, therefore, could not expect any financial or material assistance from their communities. Instead, for squatters in Bachhau, some form of public government assistance or private NGO intervention was essential for rebuilding their houses after the earthquake.

The Gujarat state government's housing recovery policy only briefly discussed public assistance to squatter households. The policy specified some compensation for squatters whose houses were completely destroyed but did not have clear guidelines on how or on what basis financial assistance would be made available to squatters. The policy stated that destroyed squatter houses (built with foundations and walls made of mud or burnt bricks with cement mortar) would get financial assistance at the rate of 2,200 rupees (\$52) for every square meter of built-up area with a maximum limit of 55,000 rupees (\$1,294). Moreover, shanty units (small, crude dwelling without a foundation and typically made of mud, thatch, cardboard, or tin sheets) would get 7,000 rupees (\$165) as public assistance. Yet the policy did not specify a number of aspects of the plan, e.g., how local authorities would verify long-term squatters, what the definition was of a squatter house and a shanty unit, or whether the newly established seismic safety building codes would apply to squatter houses. Not surprisingly, the lack of adequate guidelines to address squatter needs created much confusion during the execution of the housing recovery program.

In Bachhau, however, squatter communities could access public financial assistance and squatter households were largely able to rebuild their houses. There were multiple reasons for this. First, the NGO Unnati actively advocated for a housing recovery program for squatters with the Bachhau Area Development Authority (BhADA), an agency appointed by the Gujarat state government to implement and coordinate urban redevelopment and housing reconstruction in Bachhau. To urge BhADA to pay more attention

to squatter housing recovery, Unnati argued that with 40% of housing damage in Bachhau located in squatter areas, BhADA could not ignore the rehabilitation of squatter communities. BhADA officials were receptive to Unnati as a pressure group due to its credibility, established through its long-term presence in Bachhau as a nonpartisan and nonpolitical group working primarily for the urban poor. Moreover, instead of challenging their authority, Unnati showed its willingness to work together with BhADA officials to solve squatter housing issues and to give BhADA due credit for its role in the squatter housing program. Second, as opposed to surrounding towns where squatter housing was mostly damaged and relatively few completely destroyed, in Bachhau, squatter housing was completely wiped out, making it difficult for BhADA to ignore squatter recovery. Third, with about 10,000 residential units, Bachhau is considered a small town. So for BhADA, a recovery program that included about 4,000 squatter households was at a manageable scale and had a higher chance of success compared to neighboring towns like Bhuj, which is five times the size of Bachhau, with more than 50,000 housing units. Fourth, as a small trading center, Bachhau is not politically or economically significant, and a squatter rehabilitation program that included giving land tenure did not particularly threaten the economic or political interest of any group within or outside Bachhau. Because of this, BhADA could initiate and implement a squatter housing recovery program that included giving land tenure without facing any serious opposition, conflicts, or struggles over land. Fifth, the Gujarat state government had specified compensation for completely destroyed squatter housing (though not for damaged squatter units) in its policy guideline, which enabled BhADA to grasp this essential policy thread and expand its boundaries to apply it in Bachhau, thus building a squatter housing program around an existing state government policy framework.

Once BhADA was on board, Unnati worked informally with the agency to establish a squatter housing recovery program that suited local conditions in Bachhau. Together, BhADA and Unnati hammered out such details as seismic safety guidelines for squatter housing and defined the Gujarat government's categories for squatter housing. They also pushed for two policy changes. First, while the state government had specified a maximum amount of 55,000 rupees (\$1,309) for squatters, BhADA and Unnati convinced state-level officials that the amount was not enough to rebuild, given the high cost of materials, and that the maximum amount should instead be increased to 100,000 rupees (\$2,380). So squatters with land tenure in Bachhau received public assistance ranging from 60,000 rupees to 100,000 rupees (\$1,428 to \$2,380) depending upon housing damage and construction type (masonry or reinforced-concrete unit) prior to the earthquake. Second, BhADA and Unnati pushed for a land tenure program. Squatters who did not have land tenure but carried a Bachhau ration card, which established their status as Bachhau residents, were eligible for land tenure and housing assistance of 55,000 rupees (\$1,309).

While the collaboration between BhADA and Unnati was essential to the development of the squatter housing recovery program in Bachhau, BhADA's willingness to pursue this program was critical to its continuation. A key reason for this willingness was that Bachhau is a second-tier town in the Kutch district, with little political or economic significance. The town was out of the media and state government spotlight, which was

focused mostly on Bhuj, the economic, political, and administrative center of Kutch. The lower political stake in Bachhau gave BhADA officials more room to maneuver and the chance to introduce a squatter recovery program that they otherwise might not have risked taking up. If the stakes were higher in Bachhau, and if under those circumstances a squatter housing program failed for any reason, then the entire housing recovery program would be defined by its failure. Since Bachhau was relatively less important to the state government, and the town was not subject to intense media attention, BhADA officials were not particularly hampered by a fear of failure. Without the public, media, or political pressures to produce a spectacularly successful housing recovery in Bachhau, BhADA was willing to implement a squatter housing recovery program that may or may not succeed. Moreover, in Bhuj, the state government often changed officials according to its changing priorities. The frequently changing officials brought their own ideas, values, and approach to the housing recovery program, and they often did not follow their predecessor's plans. In contrast, in Bachhau, the BhADA CEO and the Mamlatdar were at their respective posts continuously for a period of more than three years, starting in 2002 and continuing into 2005 after the conclusion of fieldwork. This preserved the continuity of recovery programs in Bachhau.

The squatter housing recovery program in Bachhau provides important policy lessons. First, it clearly shows that while the presence of an advocacy group like Unnati is important, the involvement of local officials is critical to the creation, continuity, and success of such a program. Second, while lack of media scrutiny or political interference can enable local officials to take the risk to create a program with no guarantees of success, the continuity of public officials in their positions is essential to the continuation of a program once it is introduced. Lastly, the presence of a larger policy guideline is vital because it allows public officials to create programs around an existing policy framework, based on local conditions.

CONCLUSIONS

Previous scholarship (Vatsa 2004, Berke et al. 1993, Siembieda 2002, Blaikie et al. 1994, Bates et al. 1984) suggests that the difference in housing recovery outcomes among communities is primarily due to four factors: 1) the community's own resources and assets; 2) its internal (organization) and external (links to other groups) capacities; 3) the community's socioeconomic position in relation to its class and caste within the socioeconomic structure; and 4) the type of public or private recovery assistance programs it had access to. This study argues that the first three aspects actually played a limited role in producing a significant difference in housing recovery outcomes among homeowners, renters, and squatters in Bachhau. Instead, it was the fourth reason that dictated the difference in housing recovery outcomes. This is because, without public assistance, homeowners, renters, and squatters would all have struggled to various degrees to recover, regardless of their own resources, capacities, and socioeconomic strength. Except for extremely wealthy homeowners, most homeowner groups did not have enough resources or capacities to rebuild their houses and needed external assistance. For renters and squatters, who were limited in their resources or capacities, external assistance was essential to an even greater extent. This paper argues that regardless

of the degree to which each of these three groups needed external aid, the fact remains that all of them needed some form of public assistance to rebuild and recover. This means it was the difference in access to appropriate assistance that decided which group eventually recovered and which did not.

Communities comprised of a high percentage of homeowners who have more resources and assets—i.e., savings, land—are well organized internally with links to external economic and social networks and enjoy a strong socioeconomic position in the society, all of which, according to the literature, made them well placed to recover. These aspects only went so far, however; they worked in the short term for providing temporary shelters, but they could not be mobilized and extended to long-term rebuilding of houses. Instead, it was public assistance that provided homeowners with the needed financial resource to rebuild. Yet public assistance for homeowners was a mixed bag. The policy, which focused mainly on disbursement of housing assistance funds, was favorable to high- and medium-income homeowners. These groups either had the personal resources to meet emergency expenses after the disaster without having to dip their hand into the first installment of public assistance or had sufficient assets to be eligible for a bank loan or other credit that allowed them to cover any funding shortage and meet the eligibility guidelines for consecutive installments. In contrast, many low-income homeowners, having spent their first installments beforehand, found it difficult to build their house to the required level that would make them eligible for remaining installments. This shows that a blanket policy for housing assistance that treats homeowners as a homogenous entity, without taking into account the nuances of class difference, cannot work. A deeper understanding of the different types of homeowners was clearly needed to design a housing assistance policy that could meet the needs of homeowners across different income-groups.

Communities with a high percentage of renters in Bachhau are generally low-income groups, with limited resources and assets, and few external links that could be mobilized for housing recovery. Public assistance for renters was thus a crucial component of their recovery. The state government's policy for renters was designed to disburse public financial assistance as a joint compensation to the landlord and the tenant. This was a poorly conceived policy because the idea of giving joint compensation did not work for either the landlords or their tenants. The policy was clear on the compensation amount and method of disbursement, but it did not recognize the difference in the needs of the landlord and the tenant. Landlords largely wanted to reclaim their land and were not interested in receiving any form of joint compensation on behalf of their tenant. In contrast, tenants needed some form of assistance to build their own house or to look for alternative rental housing. Here again, a clear understanding of renter housing needs was required to design an effective renter housing recovery policy.

Because squatter communities in Bachhau are comprised of mostly daily wage households with limited means, resources, and capacities, some form of public assistance was essential for rebuilding their houses after the earthquake. The state government's policy for squatters was specific about the compensation amount for destroyed squatter housing but did not have a clear framework on how or on what basis financial assistance would be given. The policy also did not account for the fact that the recovery

needs of squatters are different than that of other housing groups, and simply handing out financial compensation was not the only solution. BhADA's squatter recovery program shows that land tenure was central to squatter housing needs. Having land title meant that Bachhau squatters could have some level of land security and the freedom to invest in their own houses without the fear of being displaced from the land. By not bringing land tenure into its squatter housing recovery policy, the Gujarat state government ignored a key aspect of squatter housing recovery.

Overall, this paper shows that homeowners, renters, and squatters all needed some form of external support in order to recover. Indeed, access to public assistance that was appropriately designed to meet the needs of the targeted group was the most critical issue that impacted final housing recovery outcomes in Bachhau. Yet the mere existence of a public assistance program was not enough. As previous discussions show, the Gujarat government's housing recovery policy did include financial assistance for all three housing groups: homeowners, renters, and, to some extent, even squatters. If recovery simply depended upon having a public assistance program in place, then all homeowners, renters, and squatters should have been able to rebuild and recover in Bachhau. However, this was not the case. The study argues that this is because the recovery policy did not take into account the needs of the different housing groups that it targeted. The narrowly defined public policy was detailed in terms of the dollar amount that would be disbursed to a homeowner, renter, or squatter, but it did not pay attention to the process of recovery for each housing group.

Based on the research presented here, this paper offers the following key suggestions that could present ways to design a more effective post-disaster housing recovery policy, applicable not only within India but other places as well. First, the research findings suggest that governments need to take a broader approach to housing recovery policy that focuses not only on homeowners but also on the housing recovery needs of renters and squatters. This is because, regardless of their own resources, capacities, or socioeconomic strength, homeowners, renters, and squatters all needed some form of public assistance to rebuild and recover. Moreover, local circumstances can change from place to place. For instance, it is difficult to predict the presence of an NGO like Unnati with experience in urban housing issues or that of an agency like BhADA that is receptive to a squatter recovery program. Consequently, the presence of a larger state level recovery policy that provides a broad, appropriate framework for every housing group that can be consistently applied in every urban area is critical for housing recovery.

Second, policy makers in a post-disaster situation need to understand the recovery needs of different groups or communities. The study shows that there were three broad housing groups in Bachhau—homeowners, renters, and squatters—and each of these three groups had different needs, resources, and capacities. This paper suggests that instead of a narrow approach that looks solely at ways to disburse public assistance, post-disaster housing recovery policy should focus on the needs of each housing group. Moreover, since no group is a homogenous entity, the policy should be designed to address the socioeconomic differences within these broad housing groups.

REFERENCES

- Anderson, M. B., and Woodrow, P. J., 1989. *Rising from the Ashes: Development Strategies in Times of Disaster*, Westview Press, San Francisco, 338 pp.
- Bates, F. L., and Peacock, W. G., 1993. *Living Conditions, Disasters and Development: An Approach to Cross-Cultural Comparisons*, University of Georgia Press, Atlanta, GA, 176 pp.
- Bates, F. L., Killian, C. D., and Peacock, W. G., 1984. Recovery, change and development: A longitudinal study of the 1976 Guatemalan earthquake, *Ekistics* **308**, 439–445.
- Berke, P. R., and Beatley, T., 1997. *After the Hurricane: Linking Recovery to Sustainable Development in the Caribbean*, John Hopkins University Press, Baltimore, 232 pp.
- Berke, P. R., Kartez, J., and Wenger, D., 1993. Recovery after disaster: Achieving sustainable development, mitigation, and equity, *Disasters* **17**, 93–109.
- Blaikie, P., Cannon, T., Davis, I., and Wisner, B., 1994. *At Risk: Natural Hazards, People's Vulnerability, and Disasters*, Routledge, New York, 496 pp.
- Bolin, R., and Stanford, L., 1998. The Northridge earthquake: Community-based approaches to unmet recovery needs, *Disasters* **22**, 21–38.
- , and Stanford, L., 1991. Shelter, housing and recovery: A comparison of U. S. disasters, *Disasters* **15**, 24–34.
- Comerio, M. C., 1998. *Disaster Hits Home: New Policy for Urban Housing Recovery*, University of California Press, Berkeley, 326 pp.
- Earthquake Engineering Research Institute (EERI), 2001. *EERI Special Earthquake Report: Preliminary observations on the origin and effects of the January 26, 2001 Bhuj (Gujarat, India) earthquake*, April 2001, accessed December 2008.
- Enarson, E., and Morrow, B. H. (eds.), 1998. *The Gendered Terrain of Disaster: Through Women's Eyes*, Praeger Press, Westport, CT, 288 pp.
- Freeman, P. K., 2004. Allocation of post-disaster reconstruction financing to housing, *Build. Res. Inf.* **32**, 427–437.
- Gujarat State Disaster Management Authority (GSDMA) Report, 2004. *Gujarat Emergency Earthquake Reconstruction Project-An Overview*, July 2004.
- Oliver-Smith, A., 1990. Post-disaster housing reconstruction and social inequality: A challenge to policy and practice, *Disasters* **1**, 7–19.
- Siembieda, W. J., 2002. *Choosing a Paradigm for Disaster Recovery: A Research Report*, Center for Disaster Management and Humanitarian Assistance, Tampa, FL.
- Vatsa, K. S., 2004. Risk, vulnerability, and asset-based approach to disaster risk management, *The International Journal of Sociology and Social Policy* **24**, 1–48.

(Received 17 January 2009; accepted 25 March 2010)