

In a Quake's Wake, Hunnarshala Builds Homes — and Entrepreneurs

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Leather artisan Dhaji Bhojraj proudly shows off his mirror-studded family **bunga**, or the traditional mud home of the people of Kutch, at the westernmost tip of India. He was only 12 years old when the 2001 earthquake devastated Kutch, killing more than 20,000 people, flattening villages and mowing down more than 400,000 houses — including his. That memory is still vivid, though the current surroundings are new. The extended family of 12 relocated from Khavda village to Rudrani, 15 kilometers from the capital city of Bhuj, after the earthquake.

Bhojraj's pride in his home is understandable. For a family that earlier carried wood from the forest to repair their roof and had to plaster their concrete walls three times a year, a permanent structure has been a great relief. "What's more, while tragedy befell concrete structures, the *bungas* were untouched," says Bhojraj.

His new home was built by Hunnarshala Foundation, a nonprofit based in Bhuj. Hunnarshala helps people to develop relevant housing solutions using natural technology and assists them in articulating plans of action for building the homes. For instance, after studying why the **bungas** withstood the natural disasters, Hunnarshala used material made with an amalgam of natural soil and 7% cement, as opposed to concrete and cement, to rebuild 56 villages in Kutch.

The organization also makes entrepreneurs out of the villagers. Moreover, unlike most nonprofits that subsist on grants and outside funding, Hunnarshala is a Section 25 company (as a nonprofit is called in India) that funds itself by doing commercial projects around the world. Last year, Hunnarshala had a US\$2.1 million turnover with a net profit of US\$1 million. Of this, commercial projects in India and overseas — including a green belt biodiversity park in Bhuj and earth construction and conservation work at Jahili Fort in Abu Dhabi — accounted for US\$1.9 million.

Today, more than a decade after the Gujarat disaster, Hunnarshala has come a long way. One of the goals of its founders was to retain a community feel — a potentially challenging task in an area where caste is a key issue and it is easy to get mired in sectional disputes and attempts to corner the assistance available. But Hunnarshala has managed to stay out of caste controversies.

Hunnarshala's initial aim was to provide temporary housing, an urgent need in the wake of the earthquake, based on owner- and community-driven reconstruction. Today, the organization has diversified into building an effective sewage system in Bhuj, and is involved in a slum redevelopment program in the city. (Bhuj is both a district and a city.) The backbone of its efforts to use collective decision making to cater to individual and community needs is technology that employs easily-available local materials like bamboo, mud and stone. "It helped to heal wounds during the earthquake as we encouraged people to use stones from their own debris to rebuild their homes," notes Bhuj-based Sandeep Virmani, an architect and former managing director at Hunnarshala, who migrated from Chandigarh to Kutch (a distance of some 1,400 kilometers).

A Global Resource

Having learned the art of disaster management in Kutch, Hunnarshala has since worked in Iran after the 2003 Bam earthquake, in Indonesia after the tsunami in 2005, in Kashmir the same year after the earthquake and in Bihar following the Kosi floods in 2008. It has also evolved beyond just providing shelter in post-disaster solutions. "It is important to have mechanisms for using sustainable, low-cost materials, and for recognizing the local talent of the building industry in rural areas," says Virmani.

What has also helped Hunnarshala in an environment where government assistance comes with bureaucrats and carpetbaggers in tow, is its strategy of involving the local people. This has generated a lot of goodwill. "There is so much pride participating in the process of rebuilding your own home," notes Bhojraj.

The focus on eco-friendly, cost-effective local materials is reflected in the design of Hunnarshala's offices in Bhuj. The complex is an assortment of four rustic huts (with two more under construction) built with different materials including debris, mud, cement and rammed earth, all with low-cost thatched roofs — a far cry from the concrete and glass eyesores that dot Indian cities. "We always give people a choice of these materials to construct their homes and offices," says Kiran Vaghela, managing director and a founding member of Hunnarshala, who is also a civil engineer.

To preserve the demand for natural raw materials, Hunnarshala has been working with organizations including the Indian Institute of Technology in Roorkee, and with academicians from the Indian Institute of Science (IISc) in Bangalore to research, validate and collaborate on the use of indigenous raw materials. "What's remarkable is [Hunnarshala's] ability to absorb new technology and implement it," notes retired technology expert K.S. Jagadish of IISc. Virmani gives an example: "After the 2008 Kosi floods in Bihar, only the bamboo or wicker homes withstood the fury of the raging waters. We used local artisans who were proficient with bamboo to build homes."

In fact, artisans are the crux of Hunnarshala's business. According to Virmani, the artisan is a skilled laborer who knows the social environment and the economic practicalities of a village. "In cities, he is a cog in the wheel — a nobody. He just puts brick on brick and pads it up." In the current hierarchy of construction, the contractor is the intermediary between the architect and the artisan. And the latter never gets his due importance, Virmani says.

Hunnarshala is built around the idea that the artisan's contribution to both design and technology is immense; that he or she should be part of the dialogue between the architect, contractor and client. But this does not always happen within the communities served by the organization. "As a result, artisans migrate to big cities and lead undignified lives," adds Virmani.

To upgrade lifestyles and minimize migration, Hunnarshala is focusing on developing the local **karigar**, or artisan, to generate a pool of trained manpower. For instance, about 300 migrant laborers came to Bhuj from the central Indian state of Madhya Pradesh after the earthquake. Back home, they make their own houses from mud. In Kutch, the earthquake had left the mud **bungas** intact. Here was an opportunity: Hunnarshala encouraged the men to set up their own company and provide inputs for construction. Empowering artisans made staying at home (or their new home in Bhuj) more attractive.

To augment this effort, in 2011, Hunnarshala opened a school for artisans where they are taught carpentry and the use of local materials in construction. "It's a free school, as even our education was subsidized," says Virmani. On a recent day, by 9 a.m., 10 young men — mainly children of artisans who have studied only up to the seventh grade — are busy scraping and chiseling wood on the Hunnarshala premises under the watchful eye of master artisan Visanjibhai Gajjar. Gajjar is a contractor himself, but oversees the work done by the boys. "It's like being with your family and not like a job," he notes. "It's a democratic set-up and nobody is a boss or a junior." The senior artisans then link the students to community programs in the city to help them gain experience and build confidence. The objective is to set them up as entrepreneurs.

The Women of Mathachhaj

The chance to become entrepreneurs is a big draw for the eight women, ages 19 to 60, who are all partners at Mathachhaj, a firm that produces and installs thatch roofs. Sporting workshirts over their tunics and pants, with scarves to shield from the blazing sun, they keep the chatter going. "We are eight *beheney* (sisters)," says Geeta Loncha, 19. At noon, Loncha is perched on metal scaffolding securing a panel of a thatch roof for what will soon be a new office for Virmani. She calls out to her two colleagues on the ground to pass up another panel to pad the roof. In another corner, 22-year old Naina Maheshwari, who was married at 16, checks on her sleeping son in a makeshift crib before climbing up to help her "sister".

This is a total change of scene for the women, who were once largely field hands in adjoining villages of Kutch earning US\$1 a day. They were trained at Hunnarshala and worked on projects with a daily take-home of US\$3. "Then they told us, 'Why work for others when you can set up your own company?'" recalls Maheshwari. Today, Mathachhaj is a fully-fledged company. Last year, it made a profit of US\$15,000 on a turnover of US\$42,000. This year, however, business was slower and they could muster up a turnover of only US\$10,000 with a US\$4,000 profit. But that's a decent showing by the women who now charge their customers US\$5 for a day's work.

Hunnarshala has already spawned four companies, including Mathachhaj and three that provide walling systems. Another three — for finishes, stone construction and walling — are on the brink of breaking free. One reason why entrepreneurship is encouraged is to retain the dignity of the artisans. Artisans should be brought together so that they are not exploited, notes Virmani. "Artisans are the most dispensable and exploited. They have better negotiating power if they are federated."

However, experts question the future of Hunnarshala in the wake of rapid urbanization and the entry of aggressive developers. "That is not an issue as we are prepared," says Vaghela. "The question we are grappling with is if we go upscale, can we adhere to our values?" Also, most of Hunnarshala's work is in niche areas, points out Jagadish. "They have to get into mainstream construction like load-bearing technology," he notes.

Sudhin Choksey, managing director of Gruh Finance and a member of Hunnarshala's board, has been advocating that Hunnarshala change its nonprofit status and become a for-profit organization. "The objective was good when Hunnarshala started focusing on rural housing and local materials. As urbanization takes place, the cost of land is a deterrent for mass housing and Hunnarshala's noble endeavor might not work. There will be limitations in achieving economies of scale," says Choksey. "They have developed enough capabilities or heritage products, and this is the time to do things for profit."

Hunnarshala is in no hurry to shed its section 25 status, however. Urbanization, according to Virmani, will generate more business for all constituencies. "The challenge will be to ensure that the artisan is not pushed to the bottom of the chain." As architect Neelkanth Chhaya, who is also on the Hunnarshala's board, says, "It is the only company which ploughs back the income from commercial contracts. Even in squatter redevelopment, they don't see the house as a product given to a community," but instead as a catalyst for change. "Hunnarshala brought us to this level and showed us that dreams can come true," notes Mathachhaj's Loncha.

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