

# REBUILDING CHENNAI

## Post-2015 flood reconstruction initiative



### RISING WATERS IN CHENNAI

The non-stop torrential rains in two consecutive spells in November and December 2015 brought the urban life of Chennai to a standstill. Over 400,000 people were affected by the worst flooding witnessed by the state in the last 100 years.

In the immediate aftermath of the floods, extensive relief operations reached out to 7328 families residing in 9 low-income areas of Chennai: Jamalia Lane, Gouthaman Nagar, Viyasarpadi Madha street, Sathiyamoorthy Nagar, Annai sathya Nagar, Madhavaram, Chandadripet, Pallavan Nagar & Pumping Station, Madhavaram II and Jamalia Lane II.

Essential utilities like shoes and hygiene kits comprising mosquito repellents, mosquito coils and bath soaps were distributed. For near real time monitoring, a mobile application was used for collection of data and geo-tagging of every family receiving our support.



## MADHAVARAM: REBUILDING IN A COMPLEX URBAN CONTEXT



“When the floods came, there was water above our knees everywhere and many of our houses just collapsed.”

– Kamili, resident of Madhavaram

In the aftermath of the floods, housing became a challenge for numerous low-income families. After careful consideration of the needs, Madhavaram was chosen as the intervention area. Unlike other slums in Chennai, this community had received little assistance from the government. Located on the outskirts of Northern Chennai, Madhavaram is a former village that is now considered an urban local body. Largely from marginalised communities (scheduled castes), families here primarily earn through daily wage labour. The high incidences of alcoholism and young widows render the community even more vulnerable.

Homes here were mainly thatch huts that had weakened with the long-standing water. Some had collapsed completely and those standing were filled with muck, making it inhabitable. Yet, with nowhere else to go, some families were actually still living in the water.

200 of the most-needy families were selected with an emphasis on women-headed households, people with disabilities, the elderly and those truly unable to recover on their own.

Aside from the houses, larger outreach activities around hygiene promotion, safe drinking water and refurbishing of a school were carried out as part of SEEDS' overall initiative. These activities touched the lives of over 2400 families across the 13 clusters where the interventions took place.





“If I didn’t get this, I would have had to just patch up my old house. I couldn’t have afforded more. For me, this new house is really for my blind son. I hope it will bring him luck and joy.”

– Velagani, Pandiyan Street, Madhavaram



Velagani is a single woman who earns a living doing housework. For her, the house has meant a roof that she could otherwise not afford. Her story’s unique in their community for she’s been bringing up her sister’s blind son and anything she earns goes towards his education. At the age of 7, MuthuKumar lost his eyesight completely. At 12, a convent school recognised his potential and agreed to take him in. He has beaten every challenge over the years, earning himself a scholarship to Loyola college where he’s now studying to be a blind school teacher.



“We would lie in our old thatch house at night with water inside. There were even snakes at one point and we could only pray we’d survive. I can’t tell you how nice this new house is to sleep in. It’s really been a blessing for us.”

– Vimala, Kannabiran Koil Street, Madhavaram



Vimala and younger daughter live alone. They survive through her labour job at a steel factory which pays Rs. 150 a day. However, work is uncertain and for the last two months she hasn’t been able to earn. Her elder daughter lives in a different town and helps out with expenses whenever possible. For them, finishing the flooring of this house itself was a challenge, but one they worked hard to overcome. It will now remain their home.



“Our new home is small but comfortable. We’ve extended a little to create a kitchen space and added plastic sheeting around the walls to better protect it from the rains.”

– Amuda, Tiruwallur Street, Madhavaram



Amuda lives with her husband and two sons. Their sparse income comes from labour (coolie) jobs and they took a loan from a self-help group to complete the house. In fact, it could have been slightly larger. However, for them, protecting their carefully nurtured fruit tree which managed to survive the flood was equally important.



“We lived for almost 20 days in the water, moving all the valuables to the highest shelves possible. We all enjoy being in this new home. But since we needed the space, we’ve attached it to the old one.”

– Sumathi, Jahangir Shop, Madhavaram



Sumathi and daughters Sarayana and Sonya find their new house well ventilated and well-lit. This comparison is easy to make as their home has an interesting twist. It’s built almost as an extension of their old thatch house. Down a step and you’re in the old home. She says this was necessary as they needed more space, but couldn’t afford to extend more. She earns through odd jobs and her husband doesn’t work, using an accident last year as an excuse.



“When the rain came, my old house totally collapsed because water stayed inside. This new house is open and cool. I want to keep it safe. That’s why I’m trying to build a ramp in front of my house now, so the rain will drain off a little in case the floods come again.”

– Vella Ganesh, TVK Street, Madhavaram



Vella Ganesh lost his wife last year after prolonged illness. He has two daughters and a son, all in school now. A water can supplier, he earns an average of Rs. 2000 a month. The floods have left him with a fear of losing his home again. So after he finished ramming his floor, he bought extra rubble to build a slope in front of his home.

## ENCOURAGING LOCAL SOCIAL ENTREPRENEURSHIP



“We always need to learn new technologies. This experience with SEEDS has given me the confidence to move forward. For shelter is one of the basic needs that will always be required. It is my dream to be able to help my community build better houses at the same cost that they now spend on thatch.”

– Yemen, local entrepreneur and RCC pillar fabricator



Yemen is a local entrepreneur who despite the lack of formal business training always had the inclination to make it on his own. After his father's demise, he was forced to discontinue his MSc to take care of his family. It was at that time that he began a small plastic moulding enterprise that slowly grew.

Over the last 20 years, Yemen's family has also been deeply involved in trying to help members of their community. They run a free night school in Ambedkar Nagar, one of the poorest clusters in the area, trying to improve the abysmal educational record and high dropout rate. It is in this capacity that he was linked with the Madras School of Social Work. During the post-flood survey and relief distribution phases, he played a key role. “When people were suffering, help was offered without seeing caste and religion. It was beyond that. It was human. For me that was the main inclination to stay joined with SEEDS.”



When the housing stage began, Yemen took the initiative to try fabricating RCC pillars on his own, even before he was offered a contract. Since it was also moulding, he was sure he could handle it and wanted to prove himself and help his community. He invested in a wooden mould and brought in people with RCC experience. On seeing and judging his quality, SEEDS gave him a small order that slowly grew to finally cover 180 houses. Yemen later invested in steel moulds as well.



His team of four when they began had expanded multi-fold as the order grew. "At the height of our RCC work, I had 20 workers. I would ensure I fed all of them. This training led to another business opportunity. I am now opening a mess (canteen) as well!"



Post-this experience, his name in the RCC business has spread. He has kept five core workers, two of whom are from the Madhavaram community. Several orders have already come in and he is confident that this will grow further.



# A HOUSE THAT SUITS THE COMMUNITY: TRIALS AND EXPERIMENTATION WITH DESIGN



“We went with an idea, but we were able to be flexible, to change and adapt. This ability to integrate the ideas of the community was a key component of success.”

– Dr. Raja Samuel, Principal, Madras School of Social Work

CLEARING OF LAND  
AND DIGGING OF  
1 FOOT FOUNDATIONS



FABRICATION OF  
PRE-FAB RCC  
PILLARS AT A  
LOCAL YARD  
ENCOURAGING  
LOCAL ENTERPRISE

House size was customised according to the land available with the house owners. In most cases, this meant that the existing damaged house was torn down and the new one built in its place. However, some families did keep part of their old structure, citing sentimental reasons or pure practicality of extra space.



CONTRIBUTIONS  
BY THE HOUSEOWNERS:  
TO EACH THEIR OWN



Once the structure was complete, each house owner was provided with rubble. It was up to the families to ram and complete the flooring; and put in doors and windows. Where able, families are also adding their own twists. Some are small additions like a layer of cardboard on the walls or a salvaged door to hold onto their old homes. Others are larger, mobilising resources to put in tiles or expand the space to create a small kitchen.



STRUCTURE WITH  
WALL AND ROOF



0.35MM GAUGE  
CGI ROOFING

The unique blend of rural and urban sensibilities made it a challenge to design and construct safe transitional homes that met the needs of the residents. It had to be quick to build, low-cost and comfortable to live in. At the same time, the tight spaces meant that each home had to be customised in size according to the land available with the family.

Market surveys were done to assess available local resources and skills. Based on this, the design process was carried out. Pre-fabricated elements of RCC pillars and ferro-cement panels were incorporated to quicken the process.

The walling options went through several changes. In the first round of designing, a bamboo strip walling was adopted, along the lines of previous interventions in other parts of the country. This didn't find acceptance here as mud plastering was required; a practice uncommon to this community. The walling design then changed to wooden planks. This was socially acceptable, but ran into issues due to the moisture content in the air. The planks began bending causing gaps to appear.

The final design used bamboo mats sandwiched with plastic sheeting. This lightweight alternative required no plastering and was conducive to the climate. The bamboo mats were procured from Kerala (for higher quality) and the actual walls were assembled in a workshop locally.



## A CLEANER AND HEALTHIER MADHAVARAM



“We’re in charge of the tank for the 20 families on our street. Each time the corporation supplies water, we chlorinate it. We also ensure everyone waits at least 30 minutes after that before filling their buckets. At first we thought it might taste funny, but it’s actually very clean and good to drink.”

- Vidya and Banu, Tiruvallur Cross Street, Madhavaram

### Safe drinking water

The main source of water in the area is the supply from the Chennai Municipal Corporation into tanks on the street corners. When tested, it was shown that this water had oral contamination. The transportation and unclean tanks were the key sources of this contamination. So the practice of 1% mother solution chlorination was promoted and has caught on.

Every time the corporation tankers fill the water drums, the appointed street monitors swing into action. They mix, filter and add 1% bleaching powder to purify the water. All residents must then wait at least 30 minutes before collecting their water. Since each street has an internal understanding for daily distribution (5-6 buckets per family), this is easily overseen. The tanks are now also cleaned at 10-day intervals.

Enough bleaching powder packets were provided to all street monitors to last three months. Costing less than Rs. 10 a packet, the women are confident that they can take up collections to ensure the process continues uninterrupted.





“We used to spend Rs. 25 per can of water which would barely last a week. Now we can use this filter and save that money.”

- Athigari, Jahangir Shop

Each of the 200 selected families has been provided with a water purifier when they complete their new house. It works without electricity, has a long life and is easy to assemble and clean. As a spin-off impact, the filter can also save families money, cutting out the cost of can water that they would buy from the market.

## Spreading Hygiene Awareness



“If we aren’t clean, how can we expect the children to follow cleanliness? I’ve personally talked to over 50 families in my area. Even the most stubborn ones are doing better now. Madhavaram is also definitely cleaner!”

- Shakuntala Amma, Women activist and WASH committee representative

The whole of Madhavaram used to serve as a dump yard for garbage. Residents were used to throwing trash anywhere. Rather than collecting garbage, even the municipal corporation used to dump loads in vacant lots.

WASH committees were set up in the different clusters. They were trained on various aspects of hygiene and played a key role in disseminating information further to the community. They also oversaw street and drainage cleaning initiatives. The committees consist primarily of women. Men and adolescent involvement was tried, but did not prove viable in this community.



The committees still meet once in 15 days. They discuss any major issues and also continue to oversee water purification and street cleaning activities. More informally, these meetings serve as a forum to help each other on a personal level where needed. When someone falls ill, for instance, they actually contribute money for treatment or offer advice to one another on a wayward family member.

The training and mobilisation of the women has created visible change in the cleanliness of the area. The use of dustbins especially has seen a shift; a sentiment broadly shared in the community as a whole. Shakuntala Amma jokingly comments that even the municipal corporation think twice when they see her coming now.

The hygiene awareness activities spread to the local primary school as well. As one of the children commented, "I now go home and tell my mother to wash her hands before she gives me food!"

The third element of the hygiene activities was around repairs in PNSS school. Run by a trust and semi-aided by the government, the school was in dire need of some repairs. The girls, boys and teachers' toilets were refurbished with tiles and a hand washing area was constructed. Additional taps, tiling and slabs made the drinking water facility more child-friendly. Finally, the kitchen and mid-day meal seating areas underwent an upgrade. The kitchen was painted and the floors and walls were tiled. The corridor where the children eat their meals was also tiled; and a slab constructed as a serving space.

Aside from the school improvements, colourful wall paintings on hand washing now adorn the entrances of community toilets in the neighbourhood.





“There’s a lot of taste difference between the vegetables we buy from the market and few we’ve tasted from our garden. Even the children like them better.”

– Vedapriya, *Teacher-in charge, ICDS*

### Organic Kitchen Garden Pilot

Vedapriya has been part of the Integrated Child Development Scheme centre in the area for many years now, starting as a volunteer while in college. Over that time, she has also earned a MA degree in sociology. The centre, open from 9 am to 4 pm currently cares for 25 children between the ages of 2-5. Several attempts at kitchen gardens had been made earlier, but the soil would simply not yield results.

Praveen and Vaishali from the Madras School of School Work led another attempt as part of their one month field study. Starting

from personally raising funds to buy seeds to in-depth advice from the horticulture department, they really immersed themselves in the process. They were clear that this needed to be organic for children’s nutrition was the central aim. On the advice of the specialists, the entire garden area was cleared, new soil mix added and local seeds sown. This included different varieties of spinach, ladies finger (bhindi), eggplant and cucumber. No chemical fertilisers were used. This time, the soil mix yielded results and vegetables have slowly started to sprout. As Vaishali comments, “For us, this was a new experience, doing everything ourselves. The reward is seeing how the vegetables are blooming. In fact, other people in the community have asked about kitchen gardens in their homes.”

Though the plot is small and cannot fully meet the demand for mid-day meals, the taste has caught Vedapriya’s attention. Seeing the success so far, she’s working with her assistant to maintain the garden and they want to try and expand it further.



## LINKING WITH ACADEMIA



“Academic intuitions have our own role to play in disaster risk reduction. We already have a theory paper on disaster management, but this was a good lab to field test it. Our students got confidence that if they work strategically, then they can achieve real results.”

– Dr. A Enoch, Professor, Madras School of Social Work

Starting from the relief phase, the Madras School of Social Work remained a steadfast partner in the initiative. Students participated in field surveys to assess needs and understand WASH practices; they helped put together WASH rallies and spread awareness on hygiene practices; and they took the lead on an organic kitchen garden pilot.

Madhavaram is now one of MSSW's adopted field areas and the link is set to continue. At the same time, the larger topic of disaster risk reduction has gained resonance. The institute is already partnering with local organisations on protecting water bodies around Chennai and participating in debates on preventing future floods.

