

Constructing Properly Designed Septic Tank: Tracing the Saga

The Centre for Advocacy and Research (CFAR) team visited Raj Nagar, Madanpur Khadar Phase III on June 13th and discovered two septic tanks (without partitions) had recently been built and closed. Later that week, it was decided that the CFAR team would focus on Madanpur Khadar as one of the two slums to work on containment in.



On the afternoon of June 21st we- two CFAR representatives - went to Madanpur Khadar for a meeting with community management committee (CMC) members. The CFAR team explained to the CMC members that we wanted to help make safe septic tanks that prevent open discharge of feces, and we asked about any new toilets being constructed. The CMC members showed us a couple sites where construction would soon start.

Most households in Madanpur Khadar have multi-storey houses with toilets inside, and septic tanks inside the home as well, since they have no space outside the houses for construction. They also do not connect the toilet directly to the open drain often, because the drain is rather shallow and small.

One CMC member, Phoolvati, showed the CFAR team her house, which was being newly constructed. The latter spoke to her husband, Ganesh, who is a mason and was building his own house. He said he would start septic tank construction the following day. He was familiar with the septic tank with partition design, but had not been planning on making a partition. He knew that the purpose of the partition was to separate the solid (fecal) part of septage in the first chamber, so that only the supernatant came out of the tank. He didn't require much convincing and agreed to make the tank with a partition. Afterwards, the staff visited the construction site several times to track the progress of the septic tank construction.

Interface with house owners and construction team

On June 26th, when CFAR team were at Ganesh's septic tank construction site, a resident from one of the nearby lanes, Sunil, approached them and asked them to take a look at the space where he was building his septic tank. An 8 ½ by 8 ½ foot area had already been dug out. The CFAR team explained why the design with a partition wall, was necessary, and how normally the tank should be a little longer for that design. Sunil said they had already dug out



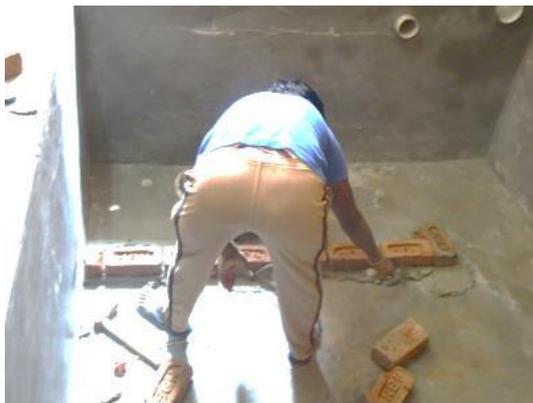
most of the soil, so he wanted to use that space, but he said it was a shame because he would like to build a partition.

Next day, the CFAR team visited the site again and met with Sunil and his wife, Anita, along with the mason in charge of constructing the house, Hariram, to discuss the possibilities for building a partition wall inside the square septic tank. The CFAR team proposed a design where one 5x3 feet corner of the septic tank would have the partition wall around it. They discussed the design in detail, including inlet and outlet positions, partition wall and hole dimensions and materials, how to desludge and how often, manhole cover specifications, etc. Sunil seemed genuinely interested and said they would lay the bricks the following day and then build the partition afterwards. Sunil's wife, Anita, was quite vocal and was able to understand a lot of the concepts that CFAR team was explaining.



However, on June 29th, when we went to the site to explain the partition wall design and specifications again, we found a mason who we had not interacted with and who was totally against the proposed design. He felt that the design was pointless and that it would only result in reduced tank capacity. He insisted that the inlet and outlet pipes should be fixed at the same level and in the same location in the tank to maximize its capacity (whereas in the correct design, the inlet pipe is higher than the outlet pipe and they are in the two separate chambers of the septic tank).

When the CFAR team went the following day to the site, the inlet and outlet pipes had been incorrectly fixed at the same level and in the same location. We then explained to Sunil why the pipes needed to be at different heights and in the two different chambers in the septic tank. We also explained what would happen if the pipes were at the same height and in the same location (i.e. feces, upon entering the tank, would directly exit it).



We also showed photos of incorrectly designed septic tanks with partitions. Finally, Sunil understood and agreed to instruct the mason to change the location of the pipes in order to build the partition wall correctly.

Construction

The CFAR staff visited the site on July 1st and saw that they had changed the pipe locations and plastered the septic tank walls.



The CFAR team returned on July 4th when Sunil said they were ready to build the partition. At first, the mason, Hariram, was raising an issue about there not being enough space between the partition wall and the septic tank wall for desludging. The CFAR team convinced him that the space was sufficient. Then, they started constructing the partition wall, but initially the mason placed it at the edge of the wall so that the outlet would end up being outside of the partition area and feces would therefore exit the tank. The CFAR team explained this to both the mason and Sunil, and Sunil understood and made the mason shift that part of the wall so that the outlet was inside the partition boundary. Later on, another issue was that they were using 3-inch pipe for the holes in the partition wall, instead of 4-inch pipe as recommended by CFAR team, so more holes had to be added (5 total instead of 3). In the end, the partition wall was constructed properly.



Exposure visit

In the evening on the same day, CFAR staff met with 20 CMC members and other women to explain basic information about proper septic tank design. The staff explained the need for the partition wall and mentioned some basic do's and don't's. The women understood the role of the partition wall and what the benefit of having it was (as well as the current scenario where feces is going into the open drain and causing illness). They understood that the overall goal of building proper septic tanks was to avoid open discharge of feces and reduce incidence of illness. They said that this information was useful for them in case they have to build a septic tank later on. They said that they

could inform the CFAR team when septic tanks were being constructed in their lanes, and together with CMC members could go talk to the households. They also said they could keep track of septic tank construction (i.e. what was going on at the site). Finally one CMC member in each of the 3 lanes the women were was willing to be responsible for informing everyone about new construction.



Then, the CFAR team took the group of women to Sunil and Anita's house to see the completed septic tank. Anita explained why they chose to build the partition and how the septic tank worked. One woman asked how the tank would be emptied, and she explained that they would put manhole covers on the tank and open them for desludging after 2-3 years. Another woman asked how the wastewater would move from the first chamber to the second, and Anita showed the holes with pipes in the partition wall that allow the wastewater to pass through.

Anita then went around her lane and called around 15 more women to come see the septic tank, and a similar exposure visit was done, with Anita again explaining how the design worked and why they had decided to build the partition. One woman was doubtful about septic tanks because she thought that in any case the wastewater (with feces in it) would go into the open drain and clog it. Anita explained that this tank was designed to address this issue and avoid drain clogging, since the feces would stay inside the tank and only the liquid part would go into the drain.



We then organized for the men an exposure visit and Sunil and the mason explained the design to them. Many of them were familiar with the partition concept but said that usually house owners were not interested in building them.

However, another household in the same lane as Sunil and Anita's house is planning to build a septic tank and say they will use the same design.