



INDIA

The potter whose fridge needs no power

After an earthquake broke his clay pots, a Gujarat potter built a fridge that needs no electricity.

WHERE Wankaner, Gujarat

WHO Mansukhbhai Prajapati, a potter and inventor from Wankaner

WHEN 1979 to 2022

4 min read

The story

Mansukhbhai Prajapati grew up in a potter's family in Gujarat, India. In 1979, a dam broke in the town of Morbi. His family lost everything and moved to Wankaner.

He left school after class ten to earn money. An injury to his left eye kept him from work for over eight months. Then the tea stall he opened closed in six months.

The tile press

In 1985, he joined a small roof-tile factory. He earned 300 rupees a month. He saw tiles pressed out in large numbers. Then he asked a simple question. Why not make clay pans for rotis the same way?

In 1988, he borrowed 30,000 rupees from a moneylender. He turned a tile press into a pan press. On his first day, he made 50 pans. He tied them to his bicycle and sold them in nearby villages.

At first the pans cracked on the fire, and customers complained. He tried many clay mixes until they held. Slowly, his business grew.

The broken fridge

In January 2001, a huge earthquake struck Gujarat. Most of his stock broke. He gave the pots that survived to quake victims in Kutch.

A month later, a newspaper printed a photo of his broken water filter. The caption called it the broken fridge of the poor. The words stayed in his mind. Could he build a real fridge from clay, one that needs no electricity?

The broken fridge of poor

NEWSPAPER CAPTION, FEBRUARY 2001, AS TOLD BY THE
NATIONAL INNOVATION FOUNDATION

30,000

rupees borrowed in
1988

3 years

of tests on soils and
designs

4–5°C

cooler inside than the
room

How it works

He began work in 2002. He tested many soils and many designs. It took three years.

The fridge is called Mitticool. Mitti means clay. Water sits in a tank on top. It seeps through the clay and dries on the surface. That pulls heat out of the box. No electricity is needed.

Tests found the inside was 4 to 5 degrees cooler than the room. Coriander stayed fresh for 4 days instead of about 2.

In 2005, a civil engineer saw the fridge. He ordered 100 of them and paid 200,000 rupees up front.

He went on to make a non-stick clay pan, a clay cooker and more. In 2022, the Jamnalal Bajaj Foundation gave him an award for rural science. It says more than 1,000 women have worked in his unit.

How it unfolded

- **1979** A dam breaks in Morbi. His family moves to Wankaner.
- **1988** He starts his own clay-pan business.
- **2001** An earthquake breaks most of his stock.
- **2005** The Mitticool fridge is ready.
- **2022** He receives the Jamnalal Bajaj award.

CHAPTER TWO

What makes it special

Most inventors start in a lab. He left school after class ten and started in a roof-tile factory. His best idea began as a newspaper caption about his own loss.

It is also a story about a craft. His work gave potters a new reason to keep working with clay. The Jamnalal Bajaj Foundation says his pan press brought thousands of potters back to the trade.

OUR TAKE

He did not fight the loss. He used it as a design brief, and then he taught others what he learned.

CHAPTER THREE

What we can learn

1 Borrow a method from another trade

He saw tiles pressed in large numbers and used the same idea for clay pans.

Try this: Name one tool from a different field that could solve a problem you have.

2 Read a setback as a clue

A caption about his broken filter set off the fridge idea.

Try this: Write down one recent setback and the question it raises.

3 Test until it works

He tested soils and designs for three years before the fridge was ready.

Try this: Run one small, cheap test of your idea this week.

4 Ask an expert to test it

An innovation network, GIAN, tested the fridge and helped improve the design.

Try this: Ask one expert to test one part of your work.

ONE THOUGHT TO TAKE AWAY

A loss can hold the next idea.

Sources

National Innovation Foundation (India)

Earthen kitchen products: Mansukhbhai Prajapati

Jamnalal Bajaj Foundation

Mansukhbhai Prajapati: Award for Application of Science and Technology for Rural Development, 2022

Aim2Flourish

Wheels of fortune: molding lives with a potful of ecofriendly innovations

Technology Exchange Lab

MittiCool Refrigerator

Fact-check note: Sources disagree on some points. His first pan press is said to make 600 (Aim2Flourish), 700 (NIF) or 3,500 to 4,000 (Jamnalal Bajaj Foundation) pans a day, so the story gives no daily figure. NIF says his father, a potter, became a mason after the dam broke; Aim2Flourish says his father worked in a metal factory. The story says only that he grew up in a potter's family. The spark for the fridge is a newspaper caption in February 2001 (NIF). Aim2Flourish words it as a headline, so the caption is quoted as NIF gives it. NIF says the tea stall was a short try that closed in six months; other pages say he worked at a tea stall. The tests come from NIF's older profile and may be out of date. Lines marked "Our take" are interpretation. Everything else comes from the sources above.