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Project was undertaken for design and development by

INDO GERMAN TOOL ROOM – AHMEDABAD IN THE YEAR 2019-2020.

NeeRain saves 60,000 litres of rainwater without electricity

NeeRain rainwater filter is our innovation that empowers common man to harvest fresh rainwater without human intervention and without maintenance costs. Till date, these devices have helped save 30 crore litres of fresh water across India, Asia, Africa and America.

I believe that rainwater harvesting is an important cause and requires consistent efforts. The best quality filtered water arrives at the doorstep of every individual, and we must prevent it from going into drains. Every drop of water should go to the groundwater bank to ensure water security for the planet.

I have identified a gap between fresh water availability and acute water crisis that our country is facing and undertook extensive study on easy, effective, efficient and economical way that secures water for a common man at his/ her habitat.

→ Journey of NeeRain

NeeRain Private Limited is Government of India approved innovation led start up, incubated at CrAdLE, EDII Gandhinagar, and supported by i-Hub, Ahmedabad, Government of Gujarat. NeeRain is committed to cause of Rainwater Harvesting to transform India to water secure Nation. The first patent was filed in the month of October 2018. The innovation is aimed at empowering common man to become water secure NeeRain is working on many such IPs for various applications of Rainwater Harvesting.

In 2017, I quit my corporate job in waste management after a 17-year-long stint, to start afresh. Though I wanted to continue working in the environment sector, I did not wish to follow the same line. I began exploring options. After a few months of research in various fields of the environment, I decided to work towards rainwater harvesting. I decided this after understanding a series of issues related to rainwater harvesting systems and their functionality.

We did not face any significant challenges apart from organising the finances. I was selected for CSR grant of Rs. 10.81 Lakhs from HDFC bank through Cradle, EDII. This helped us to initiate investment in mould. I managed to seek a loan of Rs 10 lakh from the bank and invested another Rs 20 lakh through the business earnings for marketing, production and packaging. **I contacted MSME toolroom (Indo German Toolroom) for manufacturing of mould and further manufacturing of product.** Team of Indo German Toolroom had supported us, not only with design, manufacturing of mould and production of articles but also gave us assembling and warehousing space in order to stabilise our initial operations. This support came in handy to overcome so many hurdles that normally drag a manufacturer down. It was also hard to create awareness and convince people to contribute to the rainwater conservation. But we were committed to make Rainwater Harvesting, people's movement to resolve acute crisis of water for healthy and happy life.

→ **NeeRain; Modern solution to current fresh water crisis**

The state and Central governments encourage water conservation and offer subsidies to install rainwater harvesting systems. Many people understand their importance as well. However, I learned that conventional systems were expensive and required space for the setup as they involved complex infrastructure such as the filtration system using gravels, as well as directing it towards the tank.

Moreover, these systems incurred high maintenance costs and requires a Mason, plumber or professional to construct and address issues. Many systems installed by private individuals were also found non-functional as they could not find the time or a professional to maintain it. Money also became a reason for people to avoid the maintenance. In many cases, old construction buildings make it infeasible to install the system.

To bring a solution to all these issues, I built a maintenance-free and cost-effective two-stage rooftop rainwater harvesting filter, NeeRain, under NeeRain Private Ltd. The device has been installed in over 1,500 households and exported abroad as well. It has contributed to harvesting about thirty crore litres of fresh rainwater till date.

I believe that Water is a fundamental resource, and everyone understands its value. India has witnessed heavy floods, during which this water washed away into drainage and rivers. Ironically, the same people facing floods experience water crises during the summer months and extract groundwater. Very few replenish it, resulting in millions of Indians suffering from water shortage. The crisis is worsening each year. The fresh water needs to fill to the ground where it comes from.

While many people wish to harvest water to build water security, the costs and complexity involved restrict them from taking the required steps.

After a year of research and development, the device was conceived and patented in 2018, aiming to empower individuals with a convenient solution and encourage them to contribute towards the environmental cause.

A domestic help, gardener, child or anyone with a non-technical background can maintain the rainwater harvesting system. It is that simple. The simplicity was the sole intention behind making the system manageable and cost-effective.

The 1x1x1.5-foot device made from ABS plastic fits on the wall of the house or building. It is attached to a pipe that receives rainwater from the rooftop and channelises it to the ground. NeeRain fits between the pipe as a bypass arrangement and has a two-stage filtration process.

The filters vary in terms of the size of particles they net. The first filter ensures that particles up to 500 microns are collected and allows water to pass through it. The water then collects in a small tank with a transparent cover which makes the process visible. The water then passes through the second filter that prevents the passage of particles up to 200 microns, which is the size of a hair. The water passes out of the system and is pure, clean and fresh rainwater. It exits to the borewell or groundwater source or tank.

There are no leakages, and the filters are removable for cleaning. It requires less plumbing costs and can be installed in a couple of hours as it only has to create a bypass in the existing pipe.

Through this simple technique, a house or an entire colony can be made water secure. The cost of the fibre filter is Rs. 3,950, while the stainless steel is Rs. 6,500. However, a traditional rainwater harvesting method costs between Rs 10,000 and Rs 15,000. The device becomes 60 to 70% cheaper.

→ **Numbers worth noticing**

A year of water collection from a 1,200 square feet roof can recover the investment costs with respect to water bills. The area will harvest about 60,000 litres of water in a place like Ahmedabad where the average annual rainfall is about 800 mm and potentially one lakh litres if the rainfall is 1,000 mm say city like Bangalore. No operations cost is involved in the process.

The devices collectively have saved about thirty crore litres of water. About 60% of the domestic beneficiaries have collectively saved around eighteen crore litres of water. The calculations are derived according to the rooftop area under harvest with the rainfall received in the region. The remaining contributions come from industrial and commercial installations which have larger surfaces and boast more water harvesting capacity.

In today's date, over 1,500 individuals across the country, 200 in North America, 250 in Africa and 100 in Asia have benefited from it.

→ **Customer Feedback**

Vishukumar Shetty, a software professional from Bengaluru, says, "I installed the device in 2020 after I came to know about it on a Facebook group to prevent rainwater wastage. The house did have an old rainwater harvesting system but was non-functional. I did not want to spend money repairing the same as it required cleaning a big tank and involved a lot of filters to be changed." He added that he could install the device with the help of a local plumber and that it is working efficiently. "The harvested rainwater is diverted to an open well in the premise, which is a smooth process. The device is easy to clean and portable, which would allow me to carry it along if I move base," he adds.

Sai Prasad, a rainwater system dealer from Hyderabad, says, "I have tried multiple devices and used the product to check for its functioning. It is not disappointing in terms of efficiency and is cost-effective compared to other devices in the market."

Rashmikant Parmar, Indian resident settled in Abu Dhabi, says. "May God bless you as you have saved my bore wells from drying at my home in Nadiad, Gujarat, NeeRain rain filters have given life to my water resource."

→ **IP portfolio of NeeRain**

Patent Pending Number: 20182103784 dated 5th Oct 2018,

Trademark Registration Number: 3887778 dated 16th July 2018,

Industrial Design Registration Number: 310782 dated 9th Oct 2018

→ **Support of i-Hub.**

i-Hub and Cradle has been heart and soul of our life journey. We have received phenomenal support, hand holding and guidance in addition to exposure to various events and platforms for our growth. I am grateful to i-Hub for dedication and commitment to transform start-up like us.

Awards and Appreciation

- We were attained global recognition by the Better India
<https://www.thebetterindia.com/255256/amit-doshi-gujarat-startup-neerain-rooftop-rainwater-harvesting-system-filter-cost-effective-no-maintenance-gandhinagar-water-crisis-conservation-innovation-success-story-him16/>
- We were also mentioned in the coffee table book of CII, on page number 54
https://ciiipr.in/CII_IP_PILOT/FlipBook.html#p=54
- Honourable minister of housing and urban affairs & petroleum and natural gas, Shri Hardeep Singh Puri had appreciated NeeRain rainwater filter at the Pitch-Pilot-Scale Start-up Conclave, Delhi
- We were also appreciated at IIM -Ahmedabad at the Indo – Malaysian Dialogue for inclusive innovation.
- Our innovation was mentioned in the speech of Eminent Professor Shri Bakul Dholakia, Ex-director, IIM-A.
- WASH Innovation Hub, Government of Telangana signed an MOU with us for the upcoming rainwater harvesting projects.
- We were selected by Ministry of housing and Urban Development to showcase our innovation in Plumbex national exhibition with a slot of presentation and felicitation.
- NeeRain will be featured in the first episode of the series called ChangeMakers by Doordarshan (DD India, National Telecast on 12th June 2022 at 8 PM).

→ **Unique features of NeeRain**

- No water loss while harvesting rainwater
- Simple, scientific and sensible rainwater filter.
- Has transparent Lid, one can see harvesting live
- No Stagnant impurities, No maintenance, No recurring cost
- Saves millions of litres of fresh, soft and pure rainwater life time.
- Can be installed by a local plumber within two hours
- Truly modular, ready to use rainwater filter.

- Doesn't need manual intervention for saving rainwater.
- Has no moving parts and requires no maintenance.
- Doesn't need electricity.

→ **Buy online or offline**

Save your bore well just by connecting NeeRain with your rainwater pipes. Buy online from www.neerain.com or other leading E Commerce Portals and raise water in your borewell
Contact : + 917778992314.