



Sustainable Manufacturing and
Environmental Pollution



PARAMENDO

Ree-Cycle



SMEP is funded by UKAid from the United Kingdom government and is implemented in partnership with the United Nations Conference on Trade and Development (UNCTAD), providing Technical Assistance to the programme.

Vision



**EMPOWERING THE
COMMUNITY TO
SOLVE THEIR PLASTIC
WASTE PROBLEM AND
CREATE A
SUSTAINABLE
CIRCULAR ECONOMY.**

Mission



**MANAGING WASTE
BY RECYCLING,
UPCYCLING AND
CONVERTING
PLASTIC WASTE
INTO USABLE
PRODUCTS.**

Our Site



- Ree is located in the northern part of Dhading district of Nepal.
- 150km from Kathmandu and 59km from Dhading Besi.
- Beautiful Tamang community village.
- 115 houses in the village .



Community Recycling Center (CRC)



**With DOKO
recyclers**



**With MAAP
Namaste
Nepal**

What do we do in CRC?



In Ree's CRC, We

1. Waste Collection: Twice a week
2. Wastes brought to CRC and sorted, segregated and cleaned.
3. Cleaned waste are compressed.
4. Wastes are bundled and Stored.

Impact of CRC



The CRC

1. Generates employment.
2. Keeps the community clean and plastic-free.
3. Generates awareness about plastic pollution.
4. Creates good example for the surrounding villages.

In CRC, we



Collect and Segregate



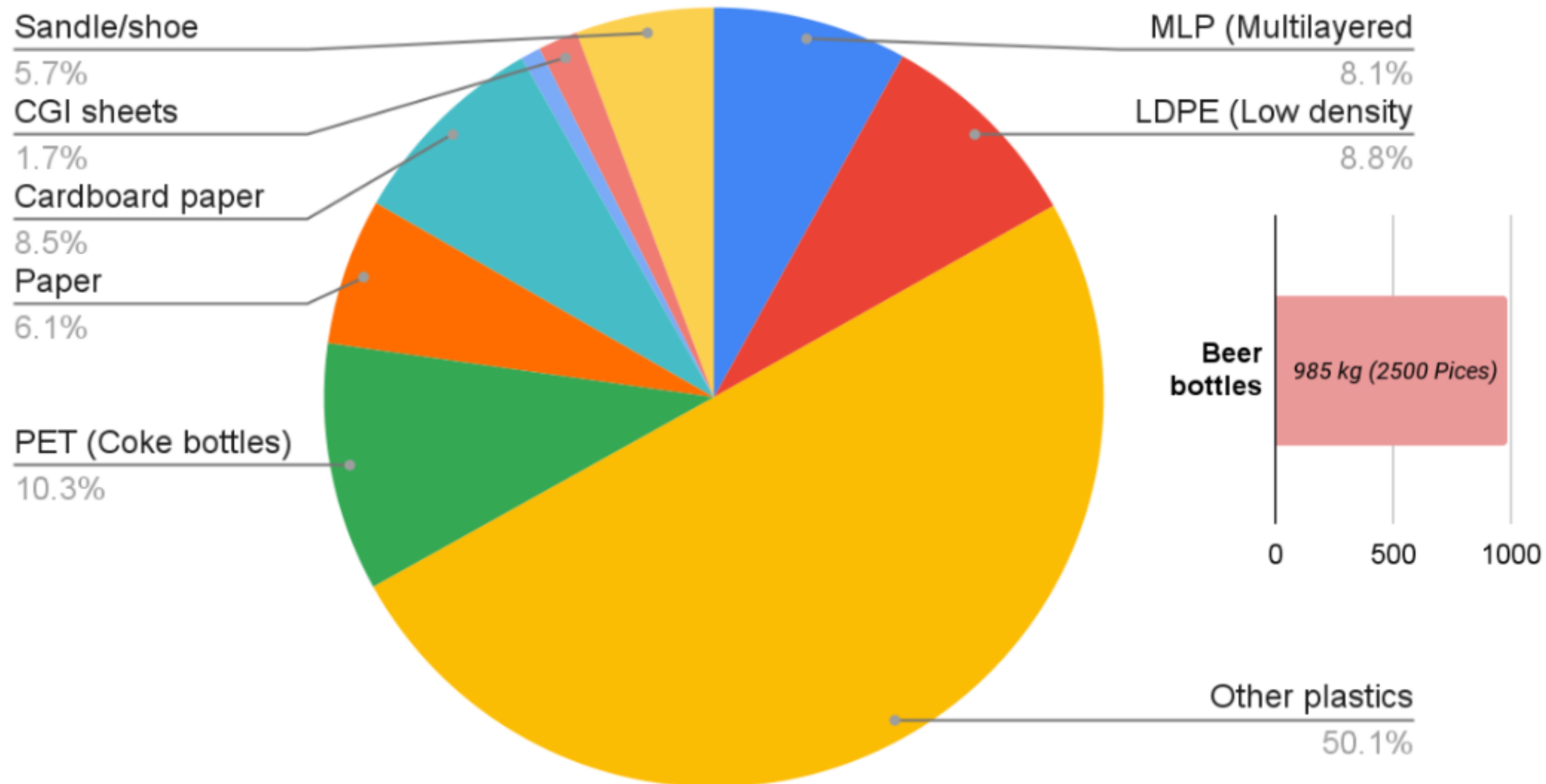
Ideate



Innovate

Waste in CRC

Latest data : June,2023



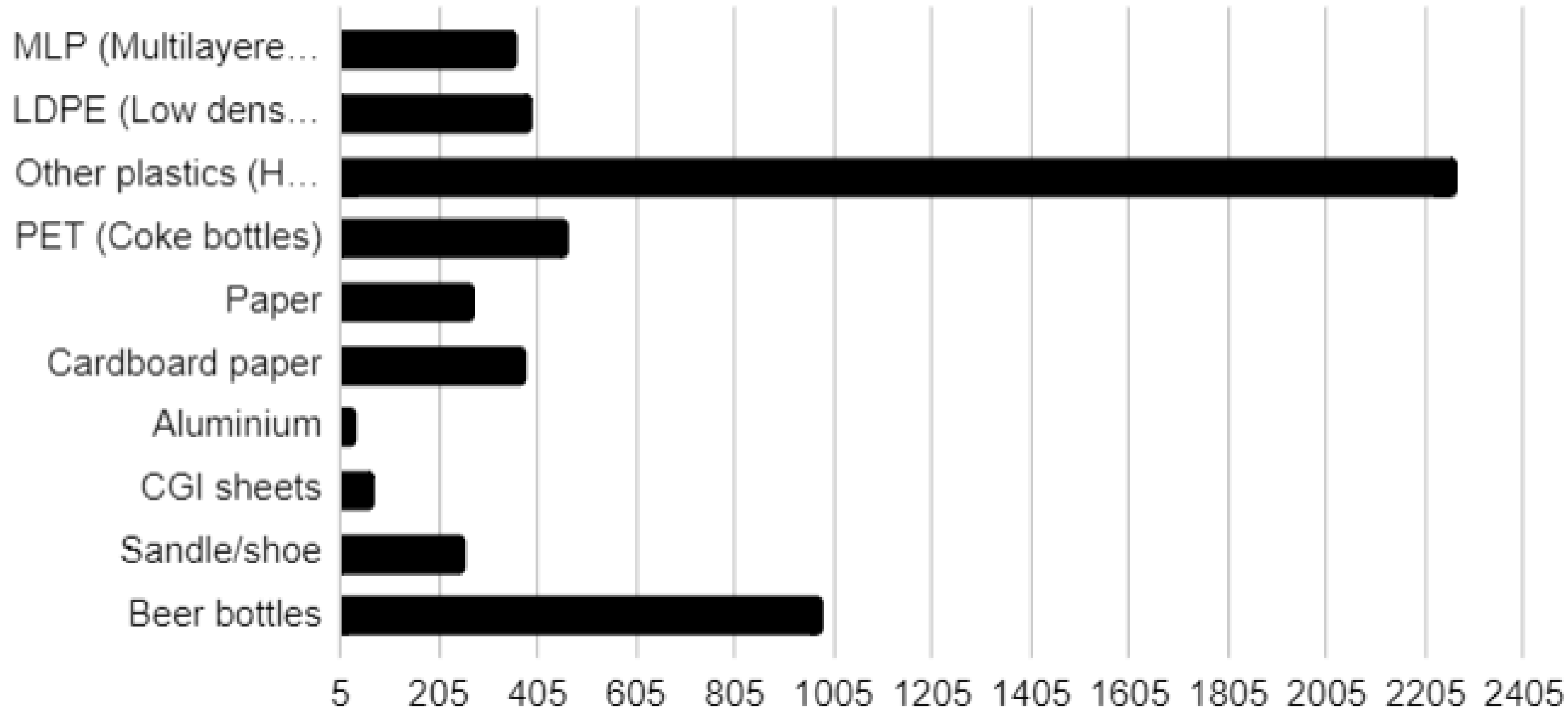
Total Waste:
4534 Kg
Plastic waste:
3500 Kg+
77.3% of total
waste is plastic.

Waste in CRC

Latest data : June,2023

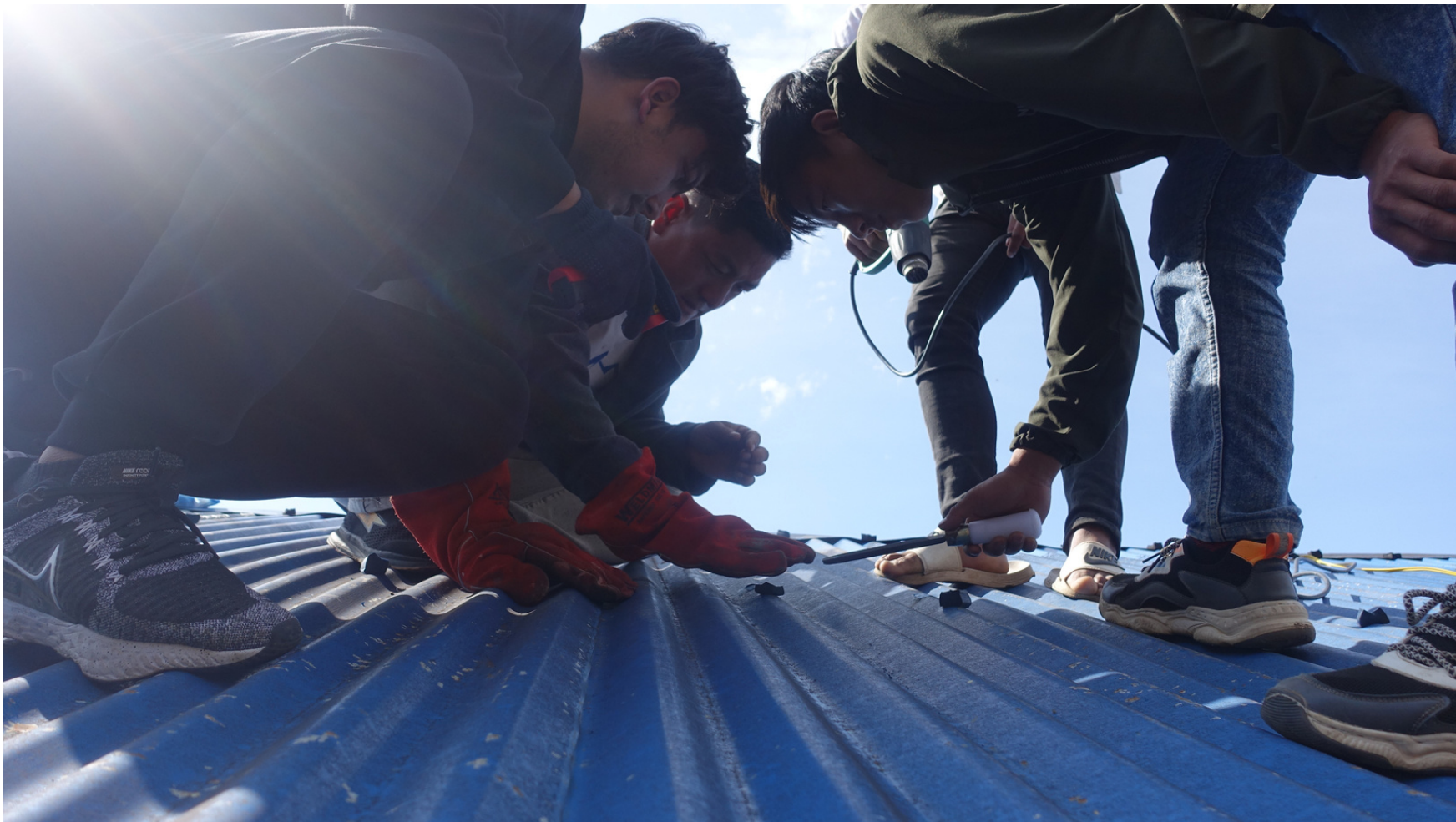


Amount of waste in KG



Our First Visit to Ree

1. Focus Group Discussion
2. Plastic education
3. Prototype in two houses



Problems of Roofing

1. Water leakage due to corrosion.
2. Loud noise during rain.
3. Too hot inside the home during summer and too cold during winter.
4. Risk of lives during natural disasters (stone slates).
5. Transportation issue for materials.

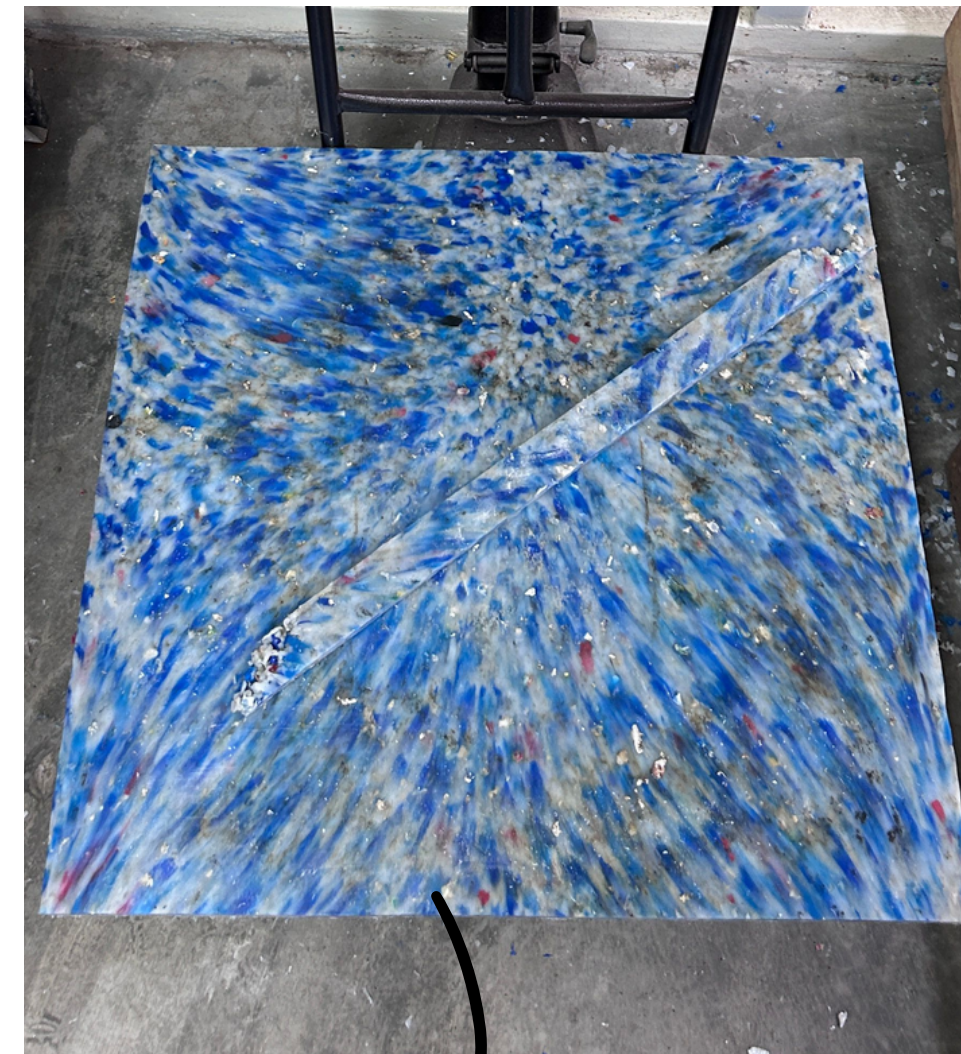


Products of Paramendo

Working on two products



20x30cm LDPE wraps.



55x55x1cm HDPE/PP tile.

LDPE Wraps

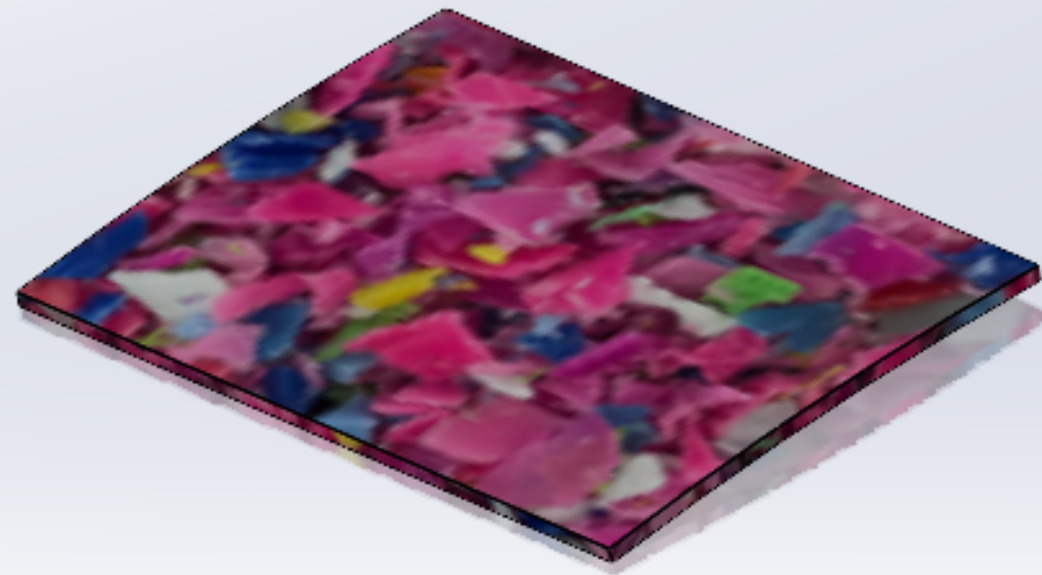
- Recycled wraps made to repair holes or corrosion in CGI sheets.
- Used as a resource to make other products such as purse, mat, etc.



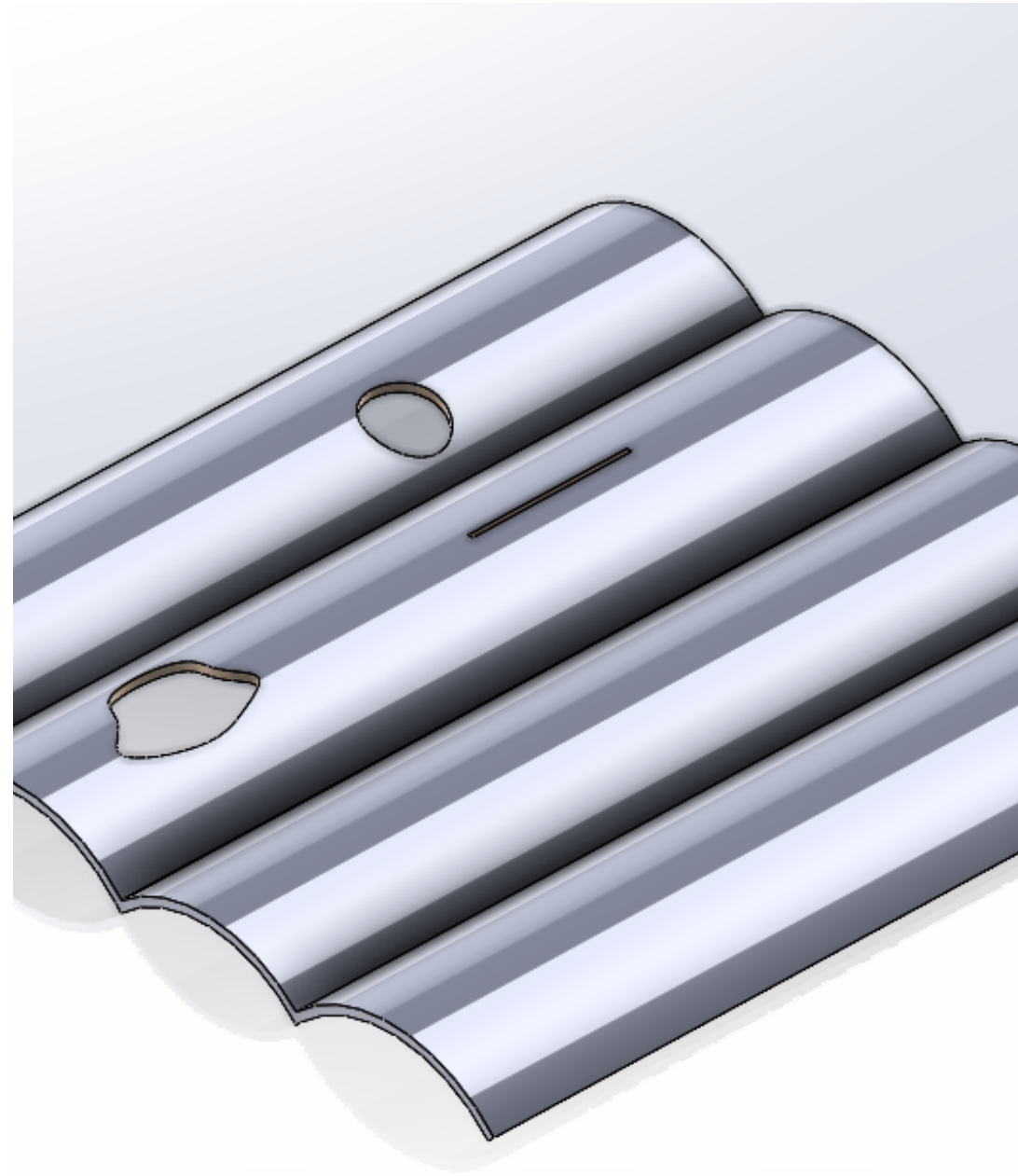
30gm LDPE



PRODUCT: Plastic Sheets



Compress



Find The Flaws



Patch Up

Feature of Plastic Sheet

- Used to repair existing roof, rather than replacing the whole roof.
- Waterproof.
- Easy manufacturing and installation.
- Recycled multiple times after the use.
- Multiple colors available.



Tested Sites

- The wrap is being tested in two locations
 - Ree, Dhading
 - Thecho, Lalitpur
- Data of wrap for optimum thickness, size and weather resistance in being taken.



Plastic wrap test results



Thin wrap of less than 1mm works best for patching up of CGI sheets.

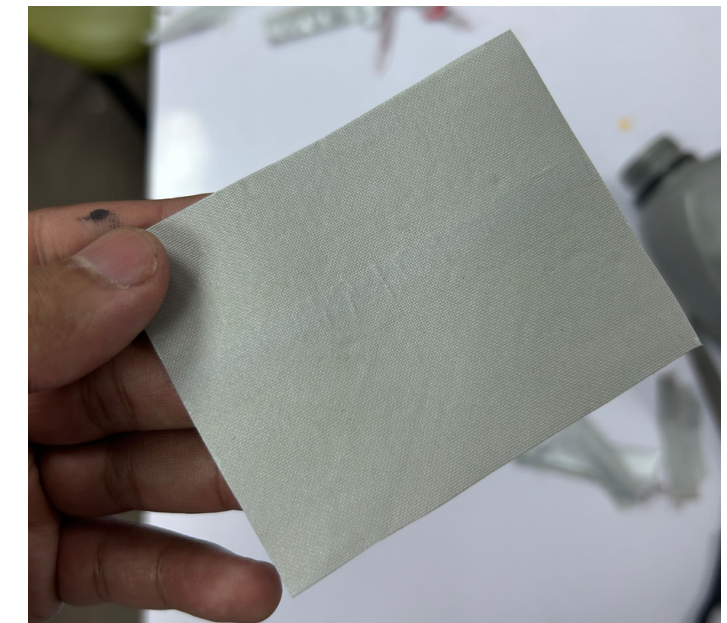
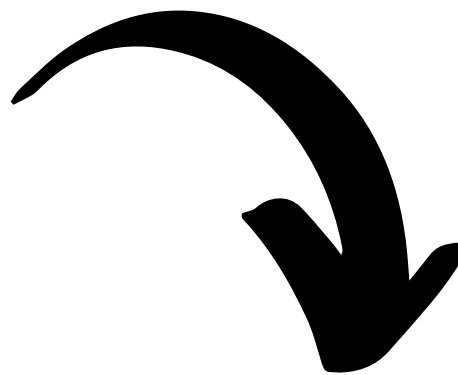
Wrap test result

House Owner :	Bishal Tamang
Mobile number :	9861113602
No of holes patched :	30

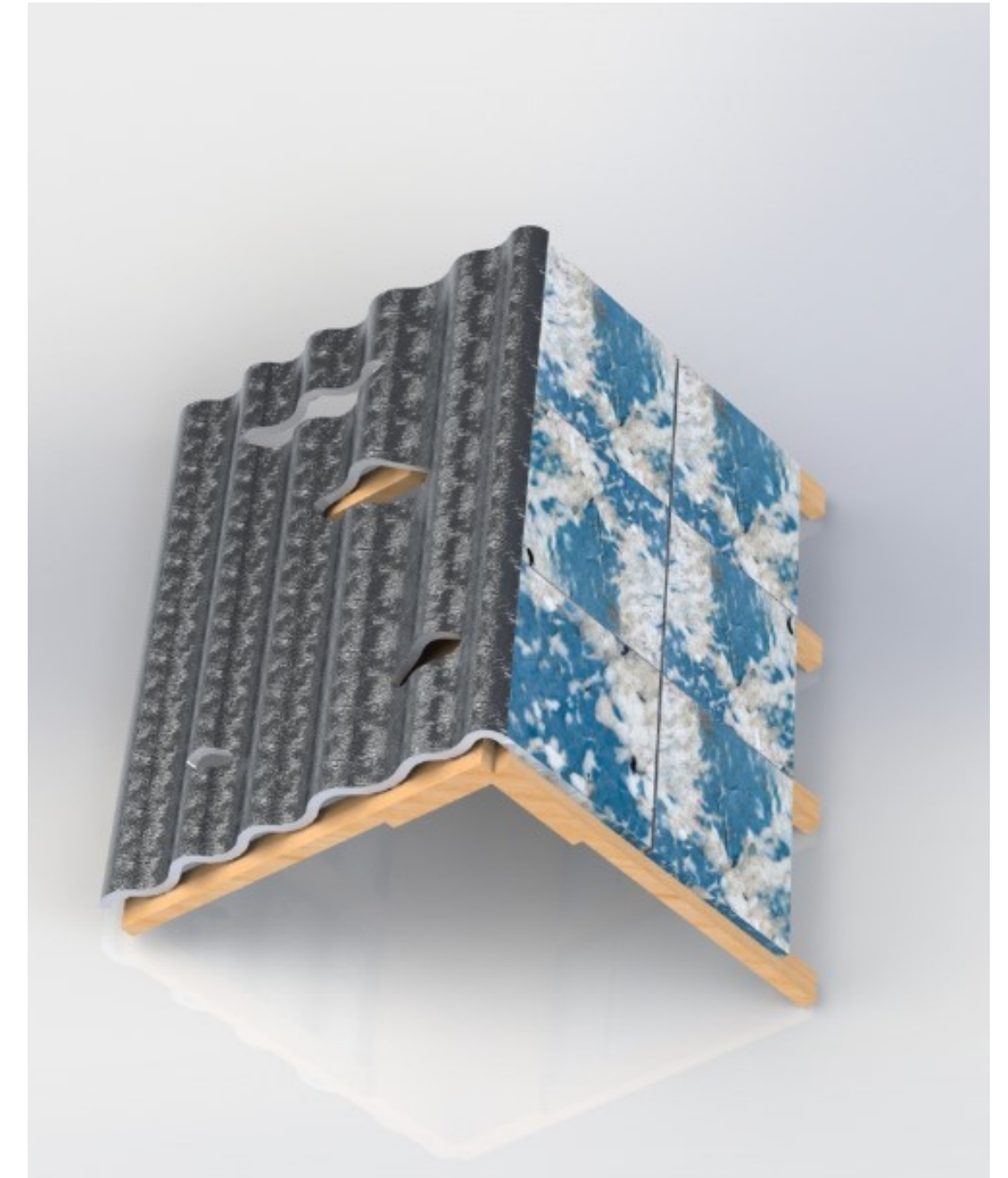
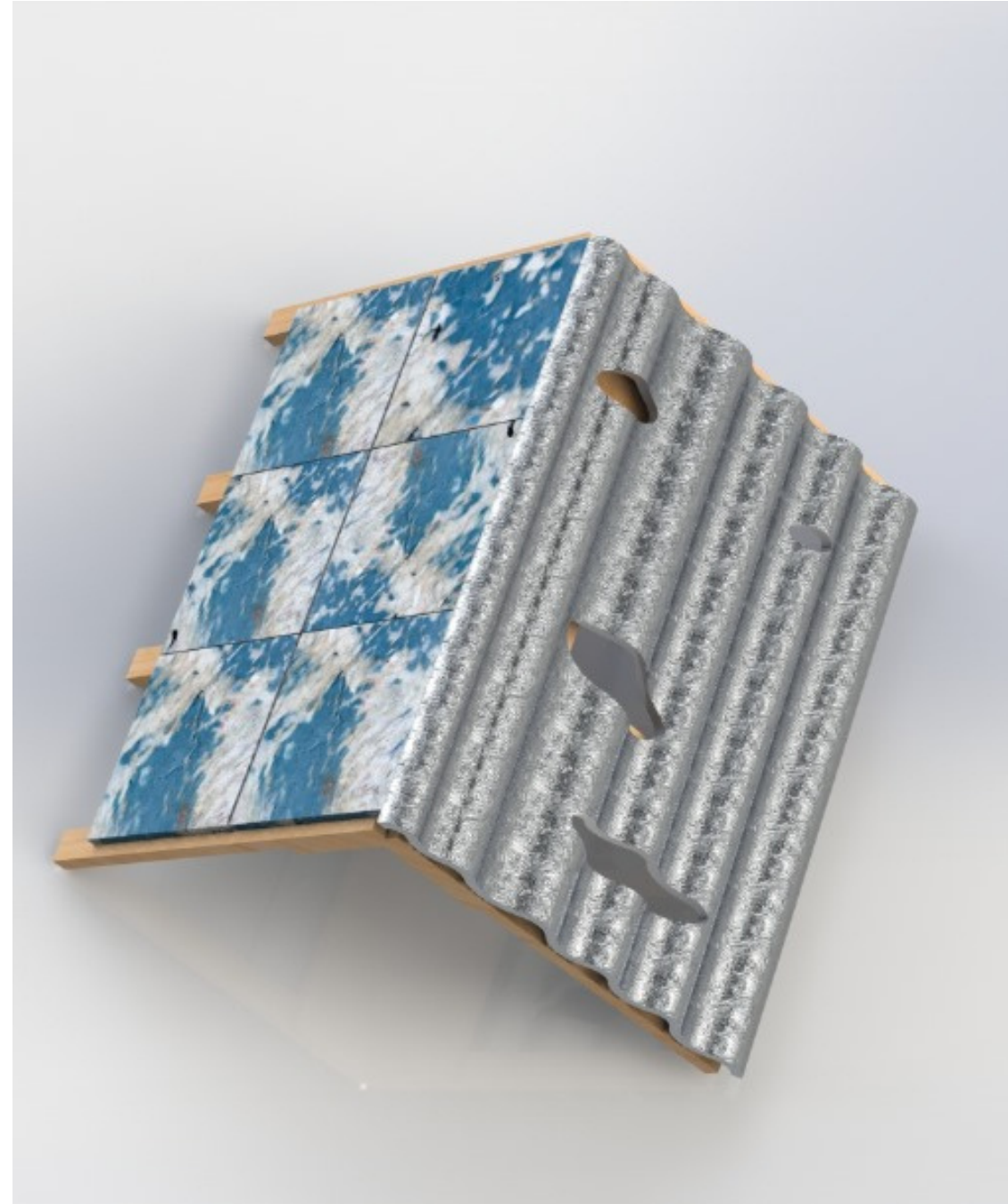
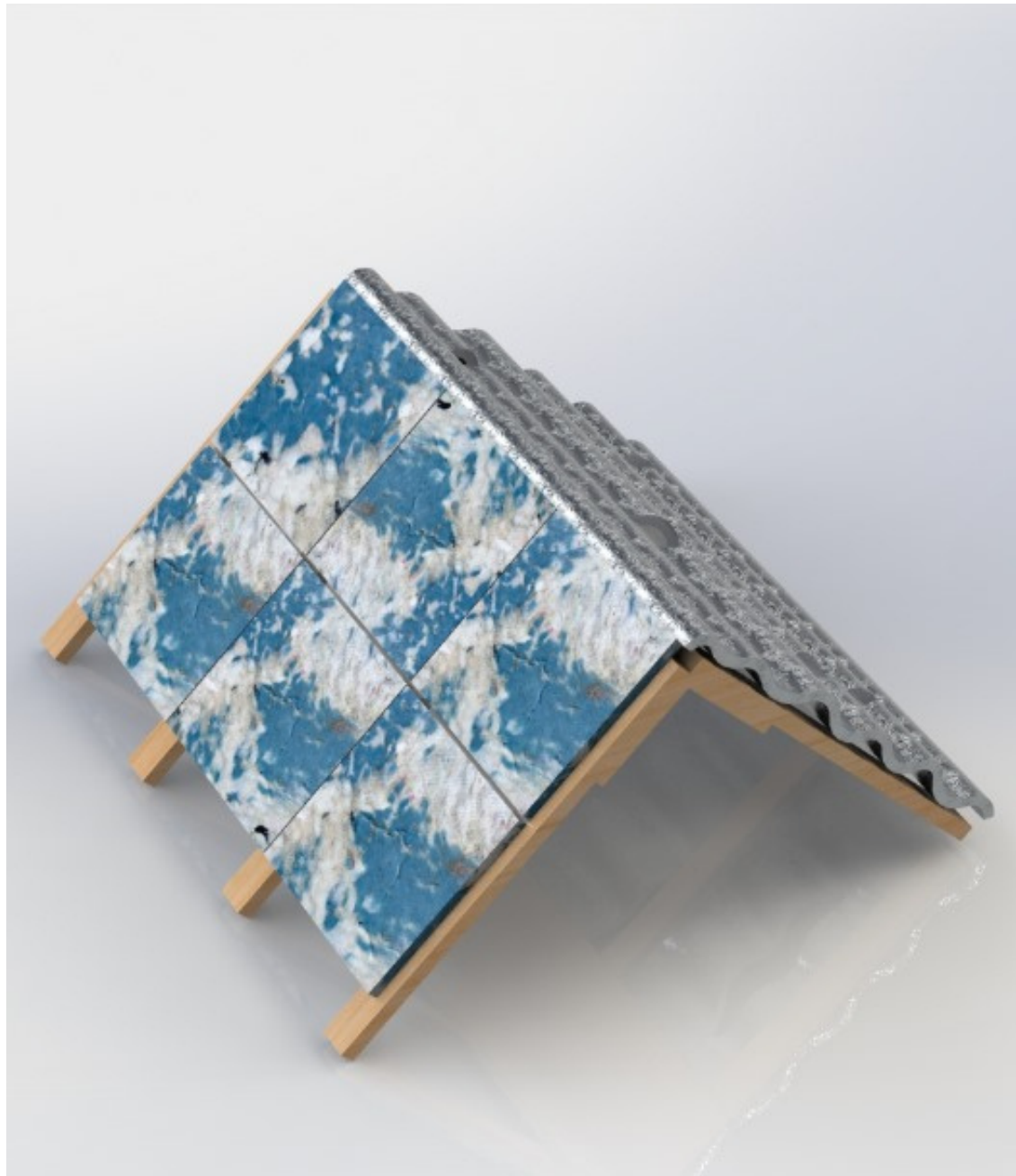
Date	Duration	Type of wrap used	Weather condition faced	Remarks
25th March, 2023	(Installed)	Mixed type of wraps	Light rain	
1st April, 2023			On 31st of March there was heavy rainfall for 2 and half hours. Before that the weather was clear and sunny	5 thick wraps have come off. The thin ones were properly fused and there is no problem.
10th April	10 days	Thin sheets were used for repairs.	No rain, the weather is sunny and clear till now.	Patch which came off during the installation was repaired.
20th April	10 days	same	No rain.	
30th April	10 days	same	Heavy rain (yeaterday 29th April, for whole day)	Has to check if the wrap has come off or not, installation of some kind of tape has been done(maybe the ones we saw at dhading) will be sending photos tomorrow.
19th July	80 days	same	Heavy monsoon faced.	The wrap is doing well, no leakage problem.
23rd July	3 days	same	Heavy monsoon faced.	No leakage problem.
23rd August	30 days	same	Heavy monsoon faced.	no leakage problem.



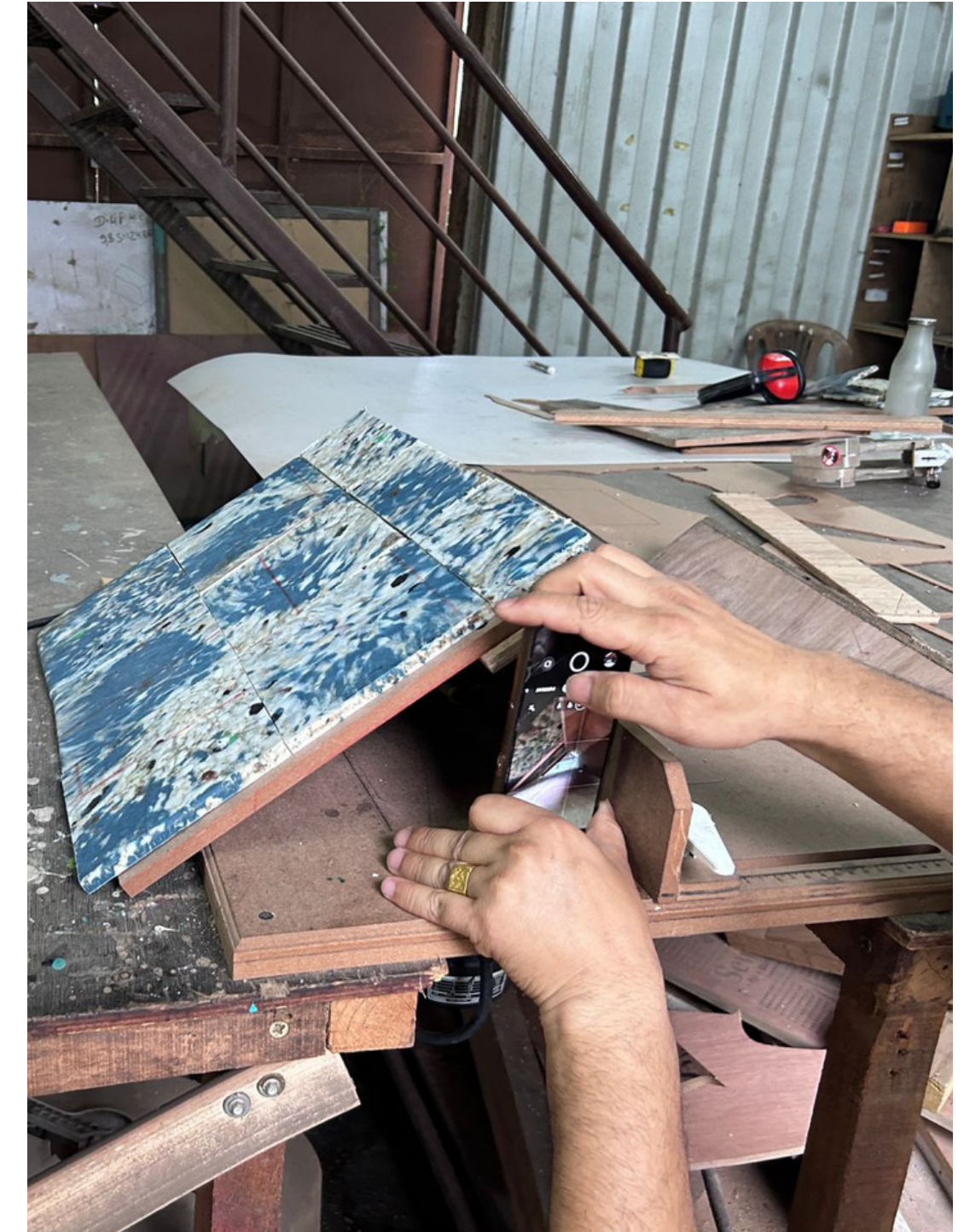
Different quality of LDPE plastics created different wrap quality.



Recycled Tiles



Process



Technicalities

A single tile of 55x55x1 cm weights 2.7kgs.

- Made by using used HDPE.
- Uses Shredder and Hot press to compress plastics into tiles.
- The thickness depends upon the size of the dye.



Properties of recycled tiles



- Noise reduction compared to CGI sheets
- Better insulation properties
- Cost-efficient than stone and CGI sheets (Rs 80 per stone and in one house around 2000–2500 stone slates used, a single panel of CGI costs around Rs 1000)
- Better protection during the disaster (Due to stone slates being heavy (2.5ton in a single house))
- Easy installation

Progress



- With the Recycled tiles,
- Size, Shape, and Quantity required for the tiles have been figured out on the base of the available machines.
 - Work on the interlocking and parqueting of tiles is in progress.
 - The application for the tiles is being tested.

Impact of Paramendo



- 2 employed workers for waste collection (Employment)
 - Expected 8 employment
- Training and masterclasses for leaders of the community
- Information dissemination to the villagers about plastics
- Clean village, healthy Villagers

Financial Viability



- Villagers-based Ecosystem (villagers create, consume, and sustain).
- Grants support.

Environmental Impact



- Clean and healthy village.
 - An average of 104 kg of plastic waste is stored in CRC per week.
- More than 4.5 tons of collected and compressed plastic waste.
- The collected waste are being converted into products that the villagers can use to sustain the project.

Scability



1. Paramendo will be an Innovation hub with replicable models and ideas in villages of Nepal.
2. It will start by establishing CRC in targeted village and collecting waste.



Future Goals



1. Take machines to Ree for production.
2. Skill sharing and training to Ree Team.
3. Engage youth, women, and people of Ree village in waste management.
4. Partner with local government.

TEAM

TEAM Ree



Bishal dai



Khaisarki dai



Abhishek Tamang



TEAM Kathmandu



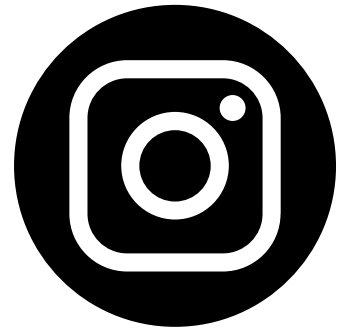
Sujit



Rahul



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