



# CHAYA

Trust in Every Foundation

## Toxic medical waste mismanagement puts public health at risk

Staff Correspondent | Published: 2025-07-14 16:51:19



The mismanagement of toxic medical waste in Bangladesh has reached an alarming level, posing a severe threat to public health and the environment, according to health experts and recent studies.

Unsafe disposal of medical waste is silently putting public health and the environment at serious risk.

প্রিন্ট এর তারিখঃ ডিসেম্বর ১৩, ২০২৫, ৮:০৯ পি.এম || প্রকাশের তারিখঃ জুলাই ৩১, ২০২৫, ৬:৩৬ পি.এম

## নজরুল বিশ্ববিদ্যালয়ে হলের ছাদ ধসে ৬ জন আহত



মাছাঃ মাহমুদা আক্তার নাঈমা  
জাককানইবি প্রতিনিধি:

যায়মনসিংহের ত্রিশালে অবস্থিত জাতীয় কবি কাজী  
নজরুল ইসলাম বিশ্ববিদ্যালয়ে নির্মাণাধীন ১০ তলা হয়েছেন, একজনের অবস্থা বেশ গুরুতর। আহতদের

দ্রুত হাস্পাতালে পাঠানো হয়েছে। দুর্ঘটনার কারণ অন্যথানে একজন জাতীয় দুর্ঘটনাটি ঘটে। জানা যায়, যখন এ দুর্ঘটনাটি ঘটে তখন বিশ্ববিদ্যালয়ে নির্মাণাধীন ছাত্রহলের দ্বিতীয় তলার ঢালাই কাজ চলছিল। আহতদের ত্রিশাল উপজেলা স্বাস্থ্য কমিশন্সে ভর্তি করা হয়েছে।

প্রত্যক্ষদর্শীদের মতে, বিকেল চারটার দিকে ছাদের পূর্ব-দক্ষিণ অংশে ঢালাই শুরু হলে হঠাতে কাঠামো দুলতে থাকে এবং মুহূর্তেই ভেঙে পড়ে। এতে উপরে কাজ করা শ্রমিকরা নিচে পড়ে গুরুতর আহত হন। তাদের কোমর, হাঁটু ও পিঠে আঘাত লেগেছে।

এদিকে দুর্ঘটনার পরপরই বিশ্ববিদ্যালয়ের ছাত্র পরামর্শ ও নির্দেশনা দপ্তরের পরিচালক ড. আশরাফুল

আলম এবং প্রফেসর ড. মাহবুবুর রহমান ঘটনাস্থলে পৌঁছান। এ প্রসঙ্গে বিশ্ববিদ্যালয়ের প্রফেসর ড. মাহবুবুর রহমান জানান, "চার থেকে ছয়জন শ্রমিক আহত আছেন। তাদের কোমর, হাঁটু ও পিঠে আঘাত লেগেছে।

এদিকে দুর্ঘটনার তদন্তে প্রফেসর ড. মাহবুবুর রহমান বে

আহায়ক করে ছয় সদস্যের কমিটি গঠন করা হয়েছে।

সদস্যরা হলেন—ড. মো. বখতিয়ার উদ্দিন, ড. মো.

আশরাফুল আলম, মো. অলি উল্লাহ, সৈয়দ

মোফাছিল ইসলাম এবং সদস্য-সচিব প্রকৌশলী মো

মাহবুবুল ইসলাম।

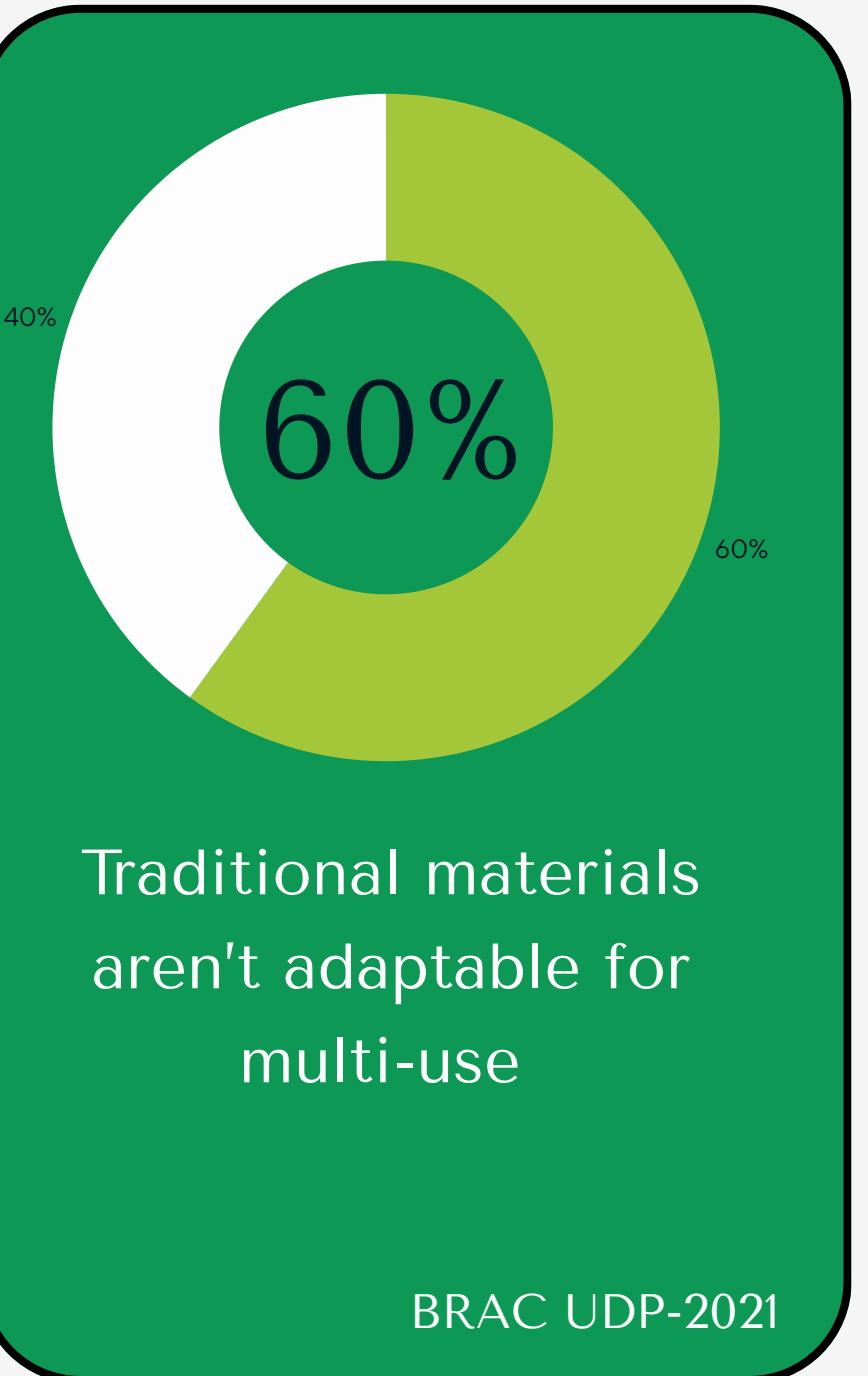
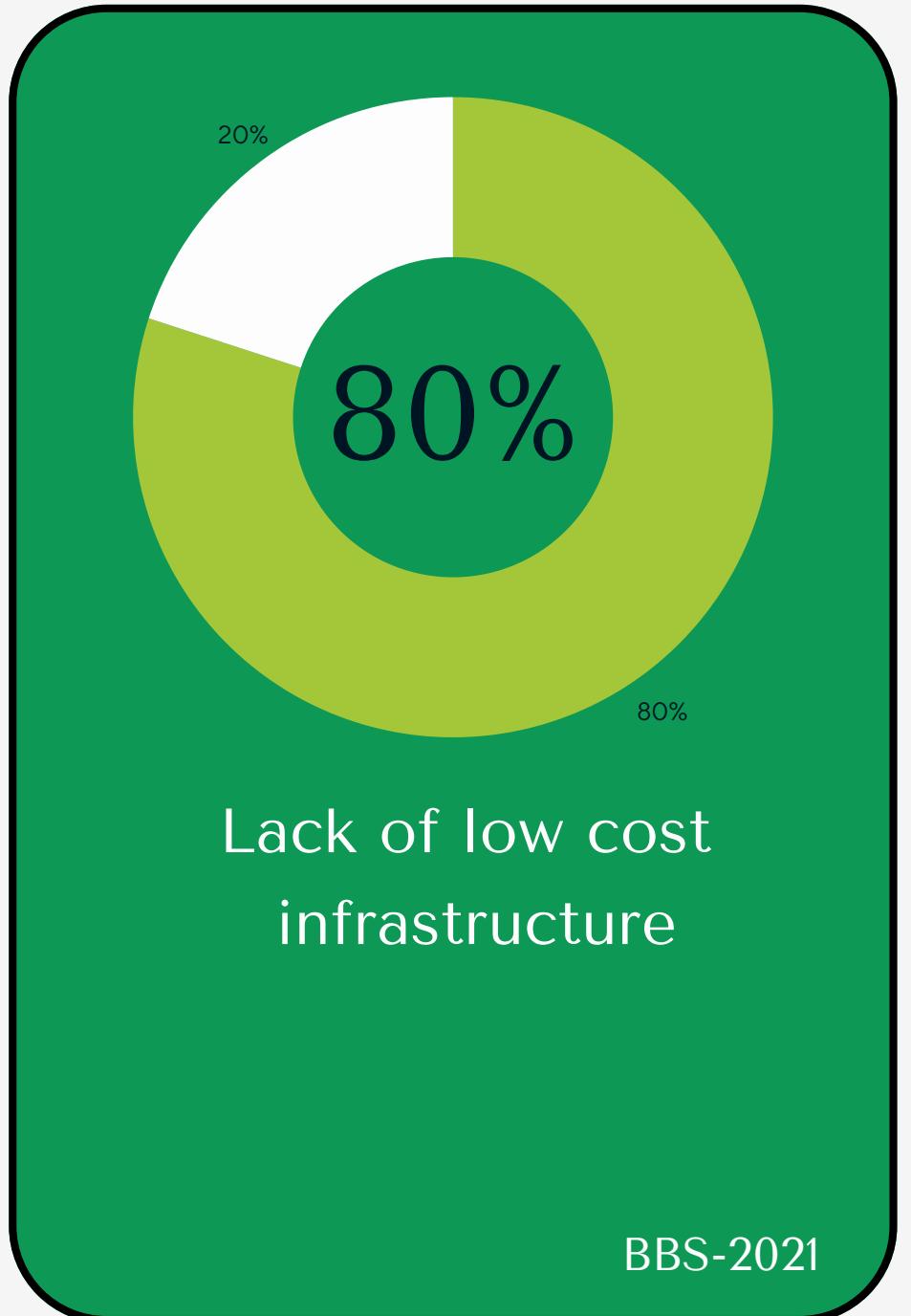
নবনির্মিত এই কমিটিকে ৫ দিনের মধ্যে প্রতিবেদন

জমা দেওয়ার নির্দেশ দেওয়া হয়েছে বলে জানা গেছে।

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people were injured after the roof of an under-construction hall

# PROBLEM

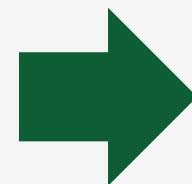


# SOLUTION

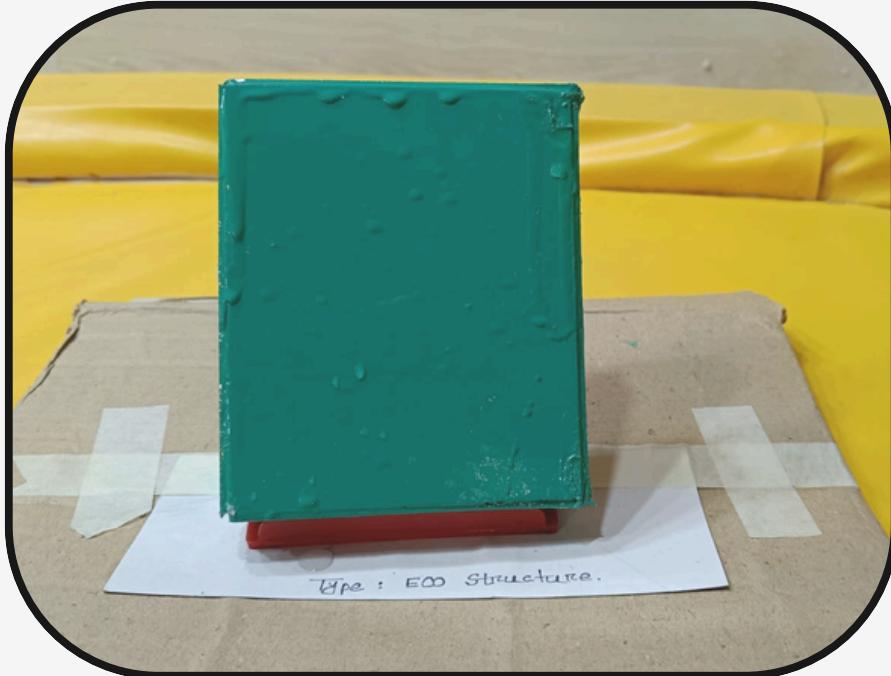
"Converting Waste into Sustainable Structure : An Eco-friendly Structure"



Waste



Eco Structure



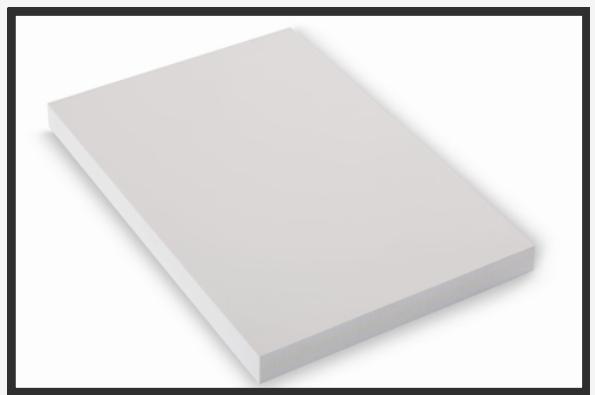
- Scalable
- Low cost
- Sustainable
- Rust free



Color Coated  
MRP : 1200 BDT



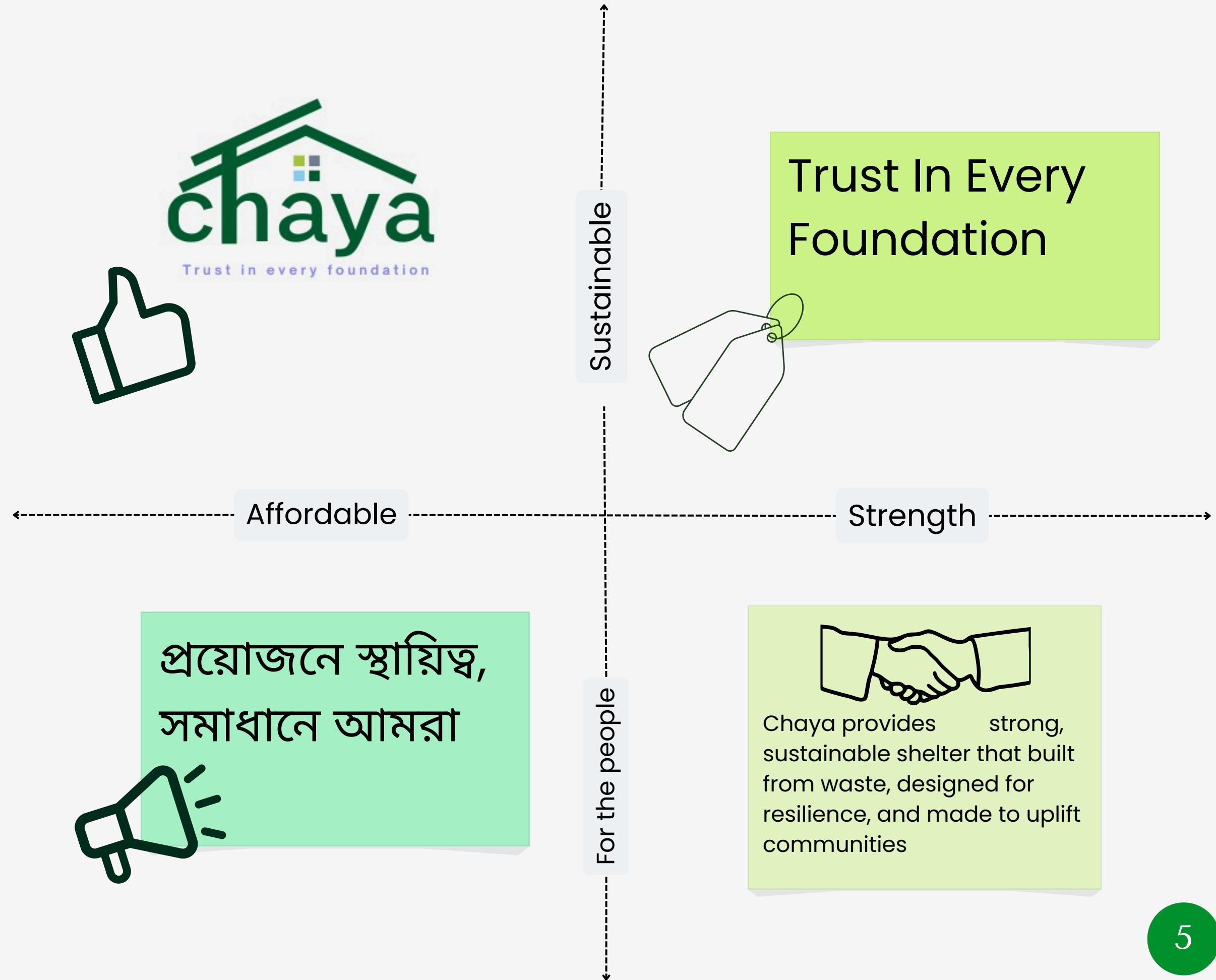
Non-Color Coated  
MRP : 1000 BDT

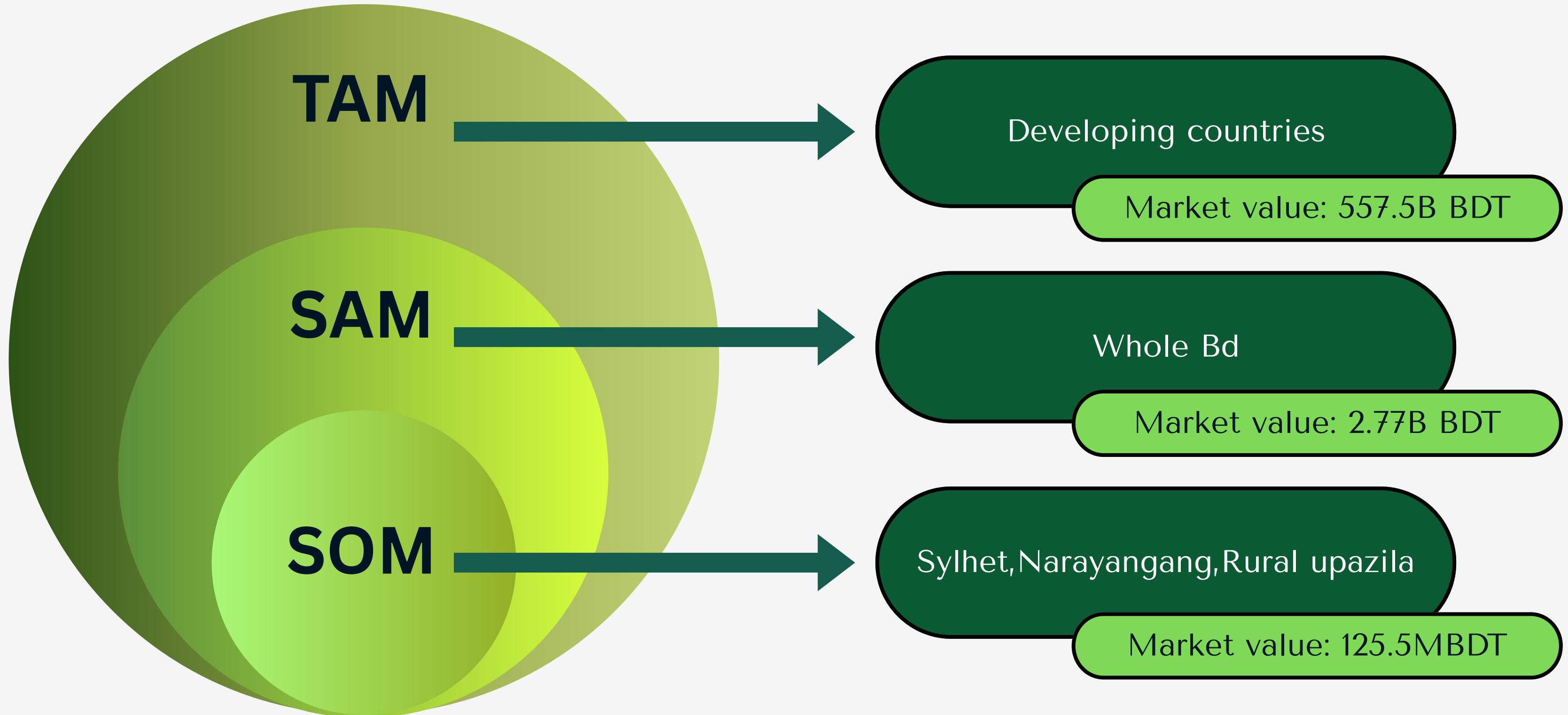




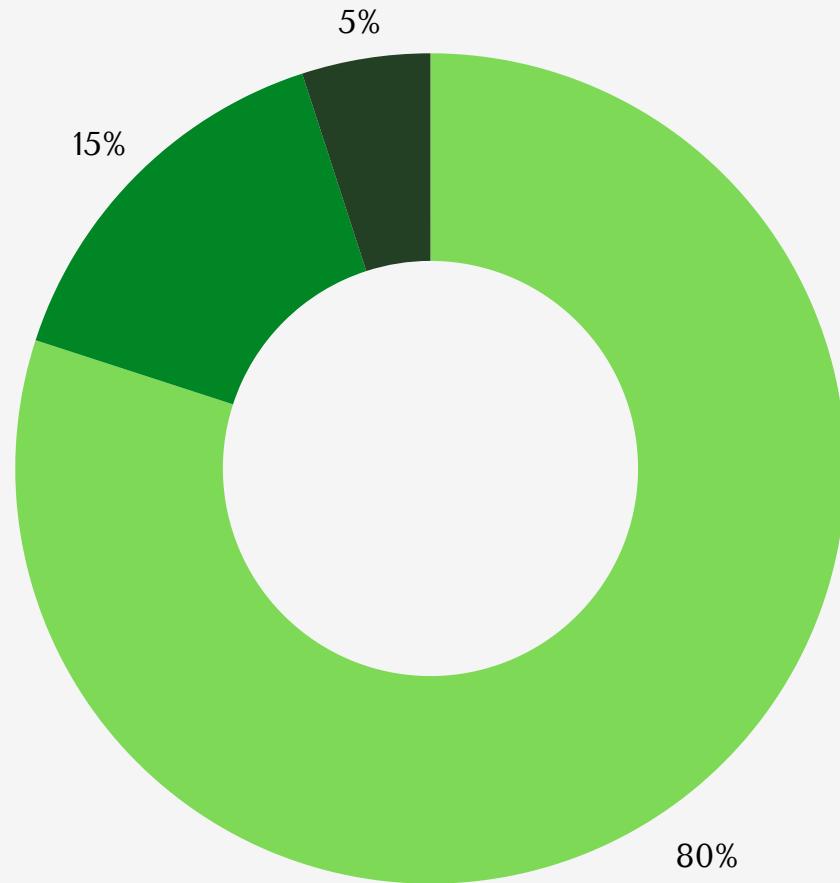
# Brand Positioning

Chaya →





When NGOs, small businesses, construction workers were asked whether they were willing to make the switch, they responded:



- Willing to use EcoRoof instead of tin roofing
- Interested but hesitant , requesting empirical evidence
- Undecided , mainly due to lack of prior exposure to recycled materials

# Consumer Analysis

## Socio Economic

**Slum Dwellers:** Low income, high vulnerability, need affordable shelter.  
**NGOs:** Budget-constrained, need scalable, sustainable solutions.  
**Real Estate:** Profit-driven, seeking cost-effective alternatives.



## Psychographics

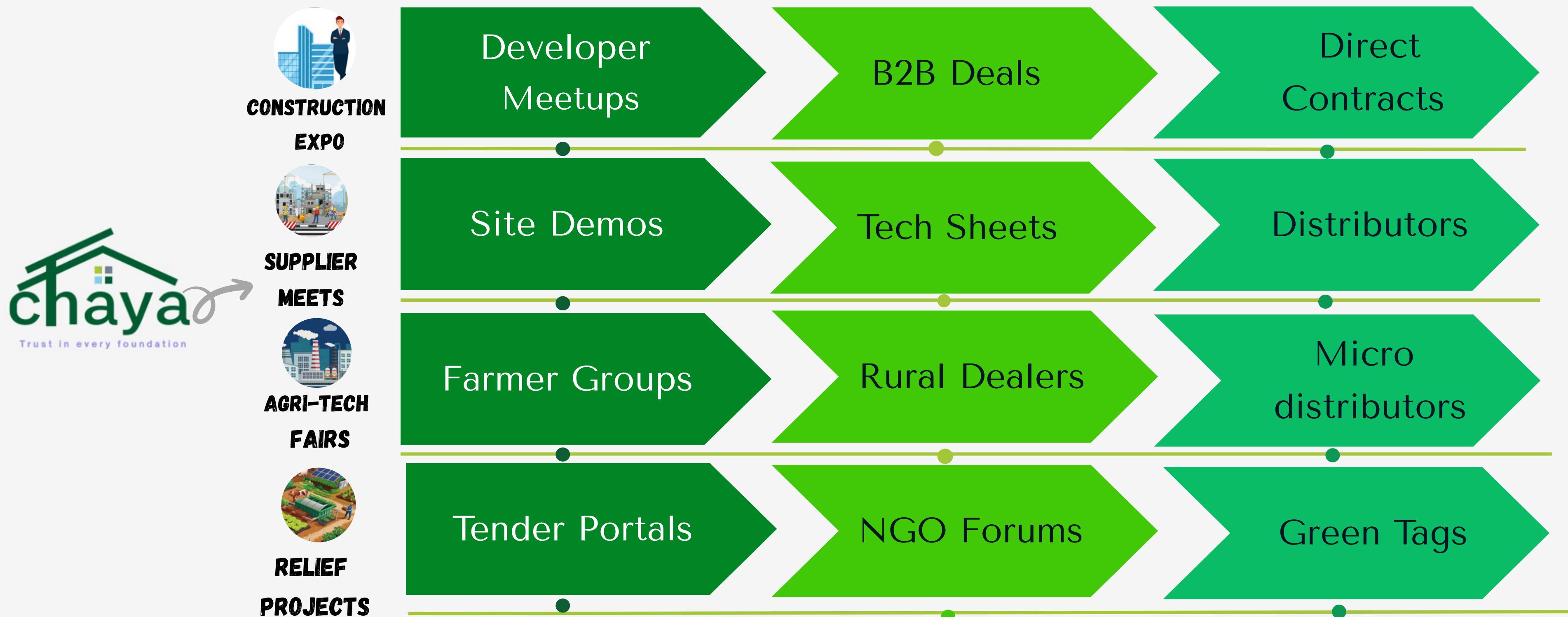
**End Users:** Value safety, comfort and dignity.  
**NGOs:** Driven by impact, environment, and equity.  
**Developers:** Want innovation, speed, and green credibility.



## Behavioural

**Rural Users:** Word-of-mouth, visual proof builds trust.  
**NGOs:** Data-driven, storydriven, pilot-based buying.  
**Govt:** Tender-based, performance-focused, brandaware





# MARKET STRATEGY

## Field

B2B & Trade Shows

NGO & Govt Projects

Eco-Awarene

Industrial  
Collaboration

Rural Market Access

## Activities

Attend expos, showcase product

Proposals, tender bids

Social media, radio, community outreach

Pilot with real estate, agro & factories

NGO tie-ups, demo setups at village markets

## What We Will Achieve By 2030

200+ leads/year, 100+ developer deals

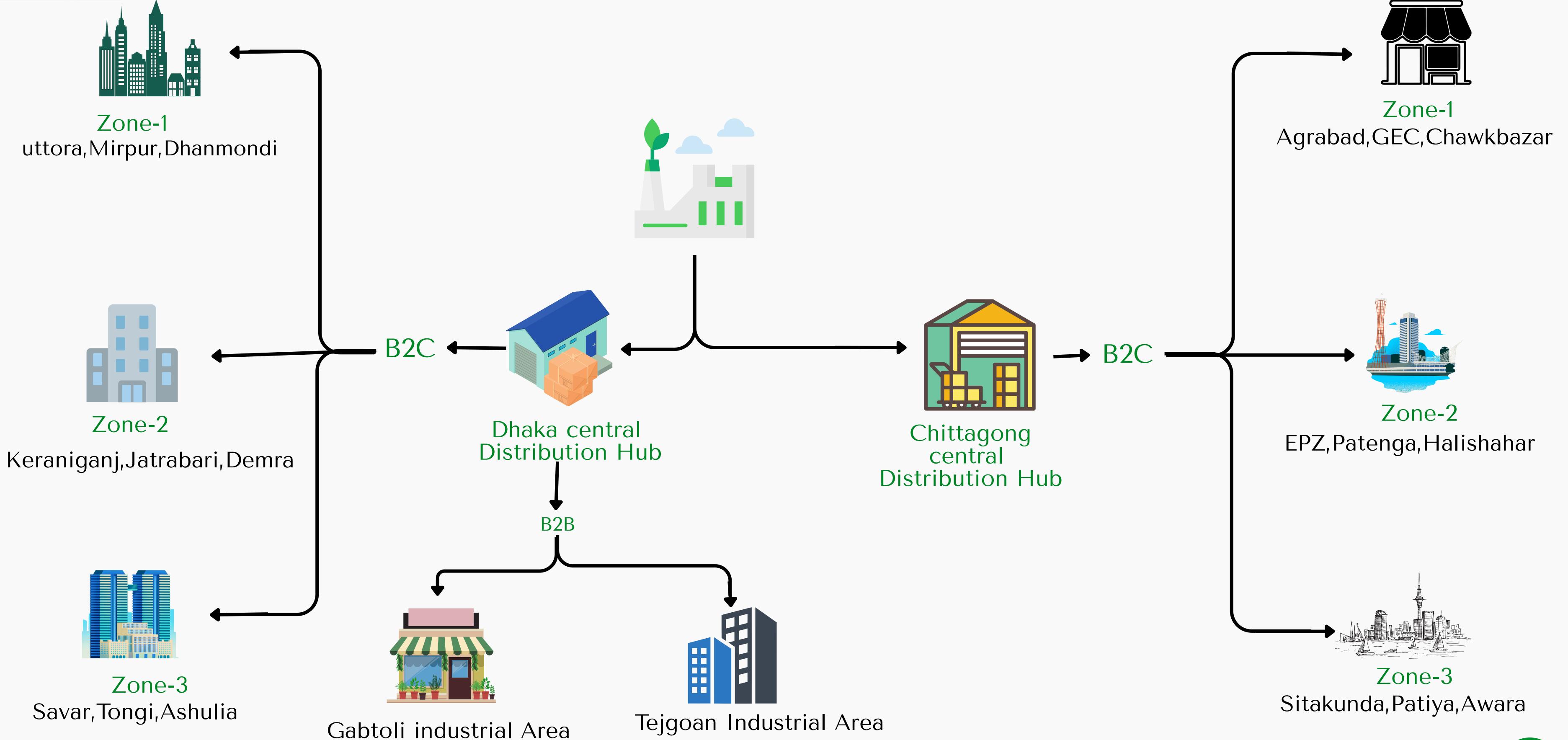
25 MOUs, 20+ project adoptions

50K+ reach, high awareness in rural & urban areas

25 pilots, 10+ zone installations/years

50+ regions, 10K+ low-income households impacted

# DISTRIBUTION PLAN



# COMPETITIVE ANALYSIS

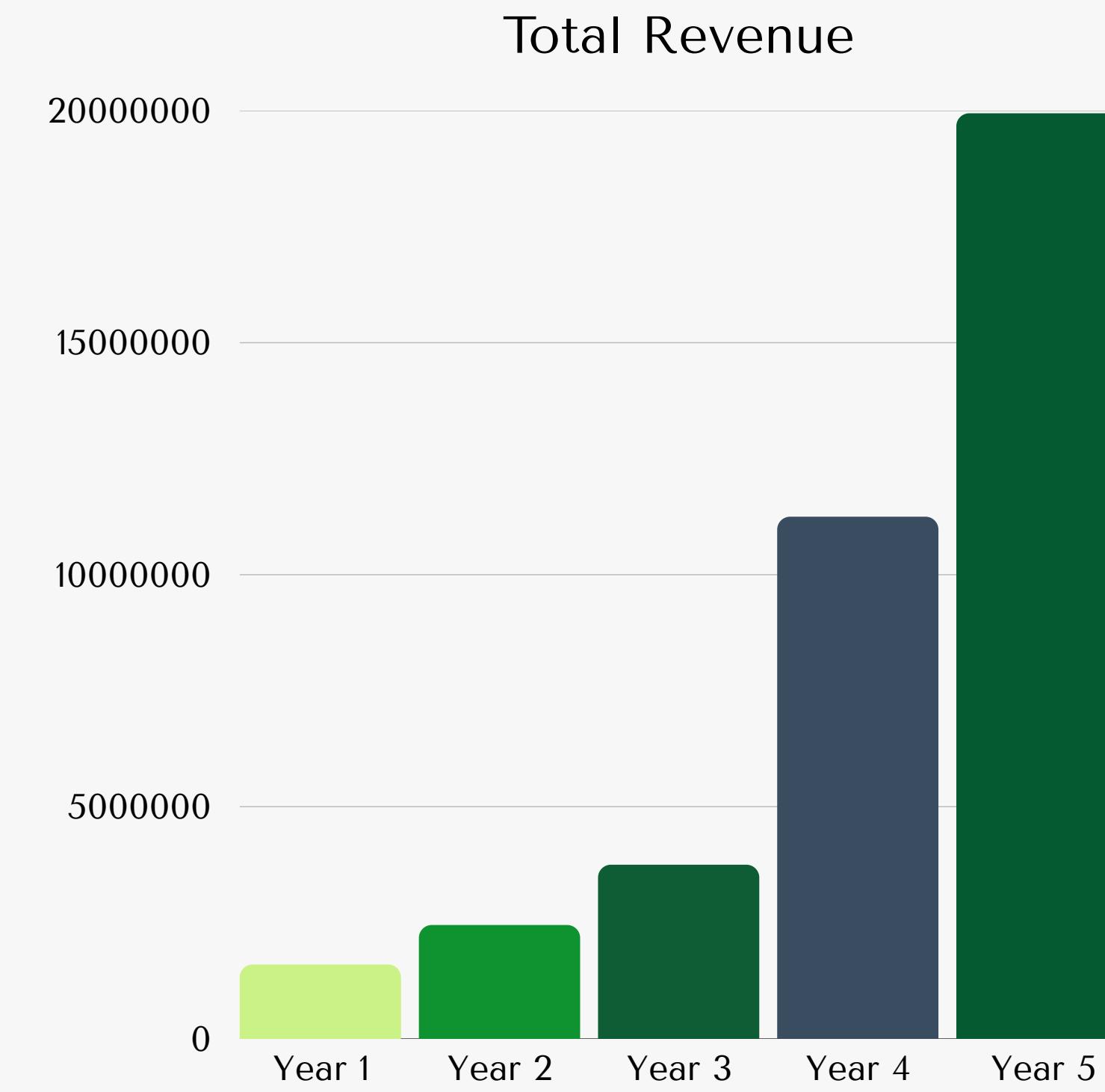
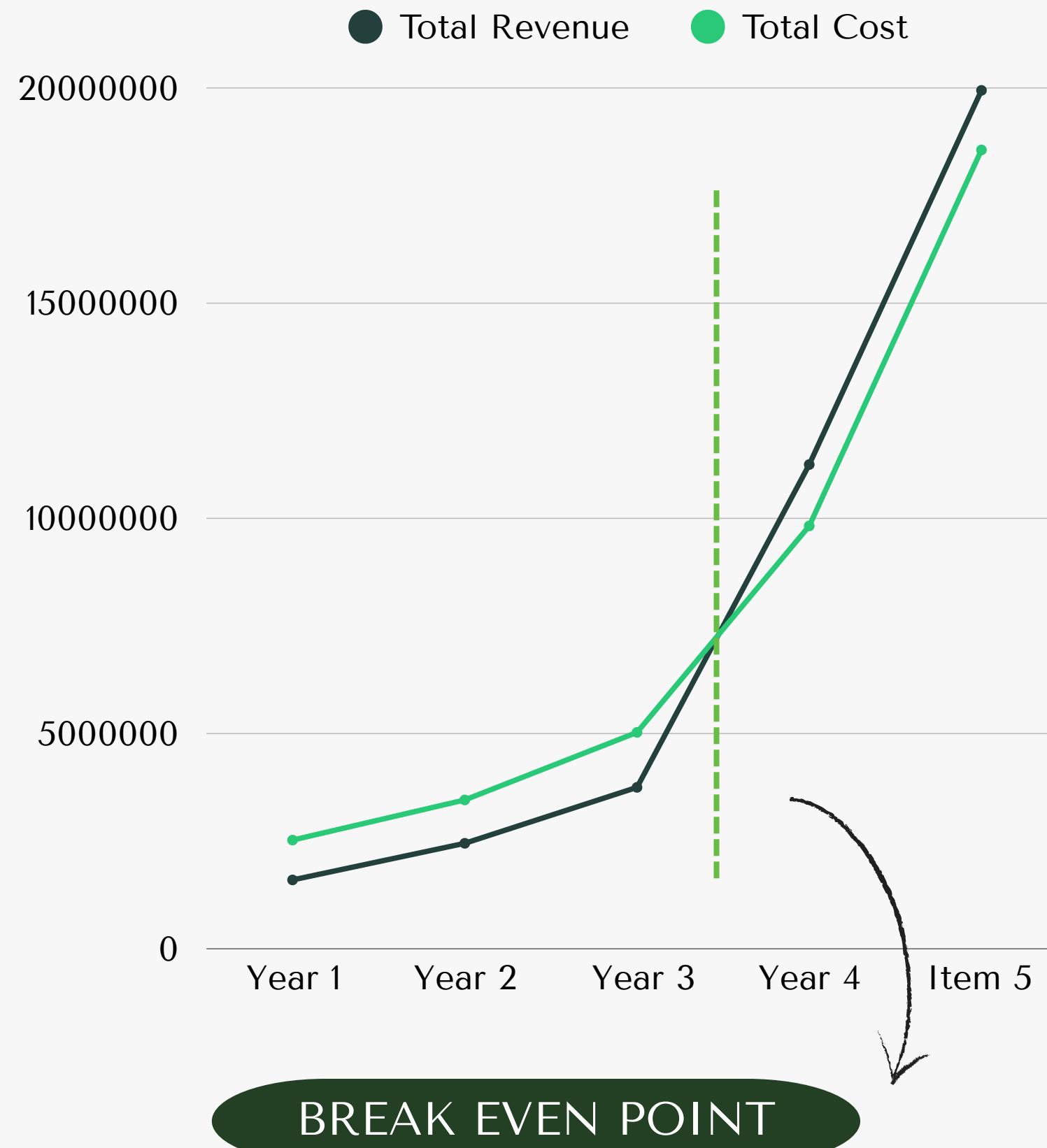


Evaluation criteria	Chaya (Medical Waste Eco-roof)	Traditional Tin	UPVC Sheet	Partex Plastic Sheet	Plastile	Meghna Group Cement Sheet	Nazir Hossain Products
Material source	Sterilized medical-grade plastic waste	Galvanized Iron/Steel	Virgin or Industrial recycled plastic	Virgin plastic	Reycled single-use plastic	Cement + fibre	Mixed plastic waste + sand
Maintanance	Very low	High (rust)	Low	Moderate	Low	Moderate	Low-moderate
Load efficiency	Excellent-suitable for weak structures	Excellent	Good	Good	Moderate	Poor high-dead load	Moderate
Weight	Lightweight	Light	Light	Light	Medium	Very heavy	Light
Durability	High-moisture, chemical & rust-resistant	Moderate	High	Moderate	High	High but brittle	Moderate
Heat resistance & waterproofing	Excellent-low thermal conductivity , 100% waterproof	Very poor , waterproof initially	Good . waterproof	Moderate, waterproof	Good , waterproof	Poor-moderate , waterproof	Moderate, waterproof

YEAR	UNIT SOLD	REVENUE (BDT)	COGS (BDT)	GROSS PROFIT (BDT)	TOTAL OPERATING EXPENSES (BDT)	NET PROFIT (BDT)
Year 1	1333	1599600	1554775	44825	970500	-925675
Year 2	2042	2450400	2123350	327050	1334500	-1007450
Year 3	3125	3750000	3244375	505625	1783000	-1277375
Year 4	9375	11250000	7578125	3671875	2246000	1425875
Year 5	16620	19944000	11762500	9419000	2621500	6797500

OUR BREAK-EVEN IS APPROXIMATELY AT 4 YEARS

# FINANCIAL PROJECTION



## TIMELINE



# SDG Goals



## SDG 9 – Industry, Innovation & Infrastructure

Transforming hazardous plastic waste into high-strength, rust-free infrastructure for a resilient future.

## SDG 12 – Responsible Consumption & Production

Closes the loop on non-biodegradable waste, converting environmental waste into a valuable building resource.

## SDG 11 – Sustainable Cities & Communities

Providing low-cost, durable housing solutions that make urban and rural settlements safer and more inclusive.

## SDG 13 – Climate Action

Mitigating climate impact by diverting waste from landfills and providing heat-resistant, waterproof roofing that helps vulnerable communities

# RISK AND MITIGATION

RISK		MITIGATION
Public health concerns over using sanitary waste.	MEDIUM	Ensure high-standard sterilization and certify safety through third-party lab tests.
Irregular supply of raw materials	HIGH	Partner with manufacturers and waste collectors
Market hesitation to adopt recycled roofing products.	MEDIUM	Offer demos and awareness campaigns to build trust and confidence.



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# APPENDICES



# Financial Drafting

Category	Item	YEAR1	YEAR2	Year3
Revenue	Product Sales	900000	1350000	2250000
	Service Revenue			
	Other Revenue			
Cost of Goods Sold (COGS)	Direct Material Costs	240980	361350	602250
Gross Profit	Direct Labor Costs	546000	624000	780000
Operating Expenses	Gross Profit	113020	364650	867750
	Salaries & Wages	0	0	260000
	Rent & Utilities	180000	180000	180000
	Marketing & Advertising	75000	120000	50000
	Software & Tools	5000	6000	8000
	Professional Services	169000	175000	128000
	Travel	160000	240000	400000
	Maintenance	100000	120000	130000
	Miscellaneous	10000	12000	15000
	Depreciation	5000	4000	2000
Total Operating Expenses	Total Operating Expenses	704000	857000	913000
Operating Profit (EBIT)	Operating Profit (EBIT)	-590980	-492350	-45250
Other Income/Expenses	Other Income	1000000		
Loan	Interest Paid	130000		
Interest Expense	Net Profit Before Tax	0	0	0
Net Profit Before Tax	Tax (10%)	-720980	0	0
Tax (Assumed 10%)	Net Profit After Tax			
Net Profit After Tax				

# LEAN CANVAS

## Problem



1.Medical and Sanitary Waste Pollution needd 500-800 years to decompose

2.80% people face high cost of infrastructural problem

3.Traditional materials aren't perfect for multi-use

## Solution



converting waste into sustainable structure

## Key Resources



- 1.First pilot installation
- 2Repeat projects
- 3.B2B & B2G project-based sales

## Value Propositions



- 1.Dual solution :waste solution+construction
- 2.NGOs , Development Organizations,Social Real Estate are primary target

3.It is fewer repairs, longer life, and predictable costs and align with SDG-9,11,12,13

## Unfair advantages



Eco Structure's unfair advantage is its rare, defensible ability to safely upcycle hazardous medical and sanitary waste into trusted construction materials

## Channels



We'll follow B2C & B2B for distribution  
we follow Community Engagement and online marketing

## Customer Segments



SOM:Sylhet,Narayanganj, rural upazila(Market value:125.5MBDT)

SAM: Whole BD (Market value:2.77MBDT)

TAM:Developing countries(Market value:557.5MBDT)

## Cost Structure



Coated colour:1200BDT  
Non-coated colour:1000BDT

## Revenue Streams



Our break even is approximately after 10 months

## PRODUCT DEVELOPMENT



## SURVEY & SESSIONS

# OUR EXPECTATIONS

Contingency

600000

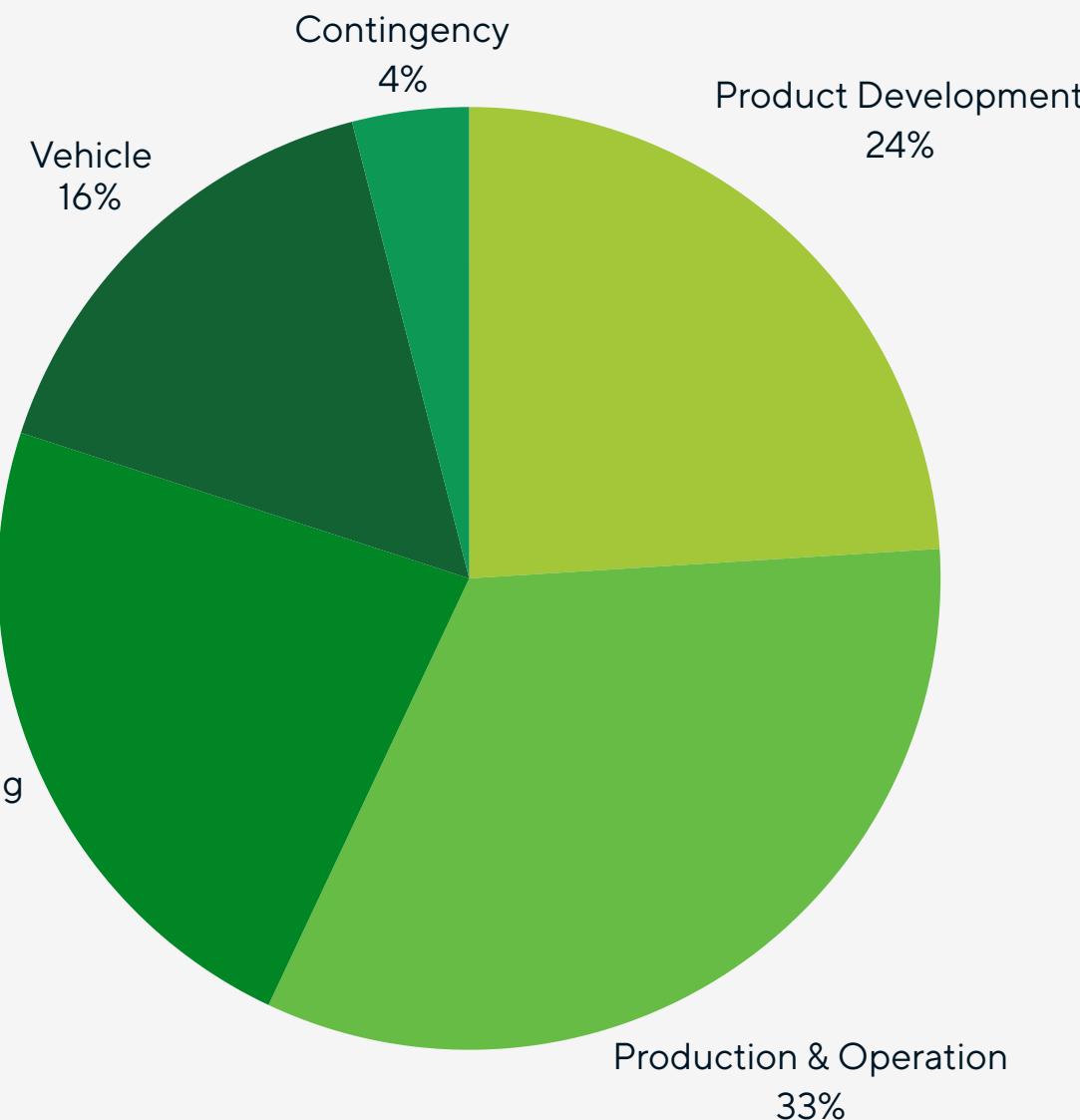
4%

Vehicle

2400000

16%

Product Development   Production & Operation >M



Total BDT 1.5 Crore

Product  
Development  
3600000

24%

Production & Operation  
4950000

33%

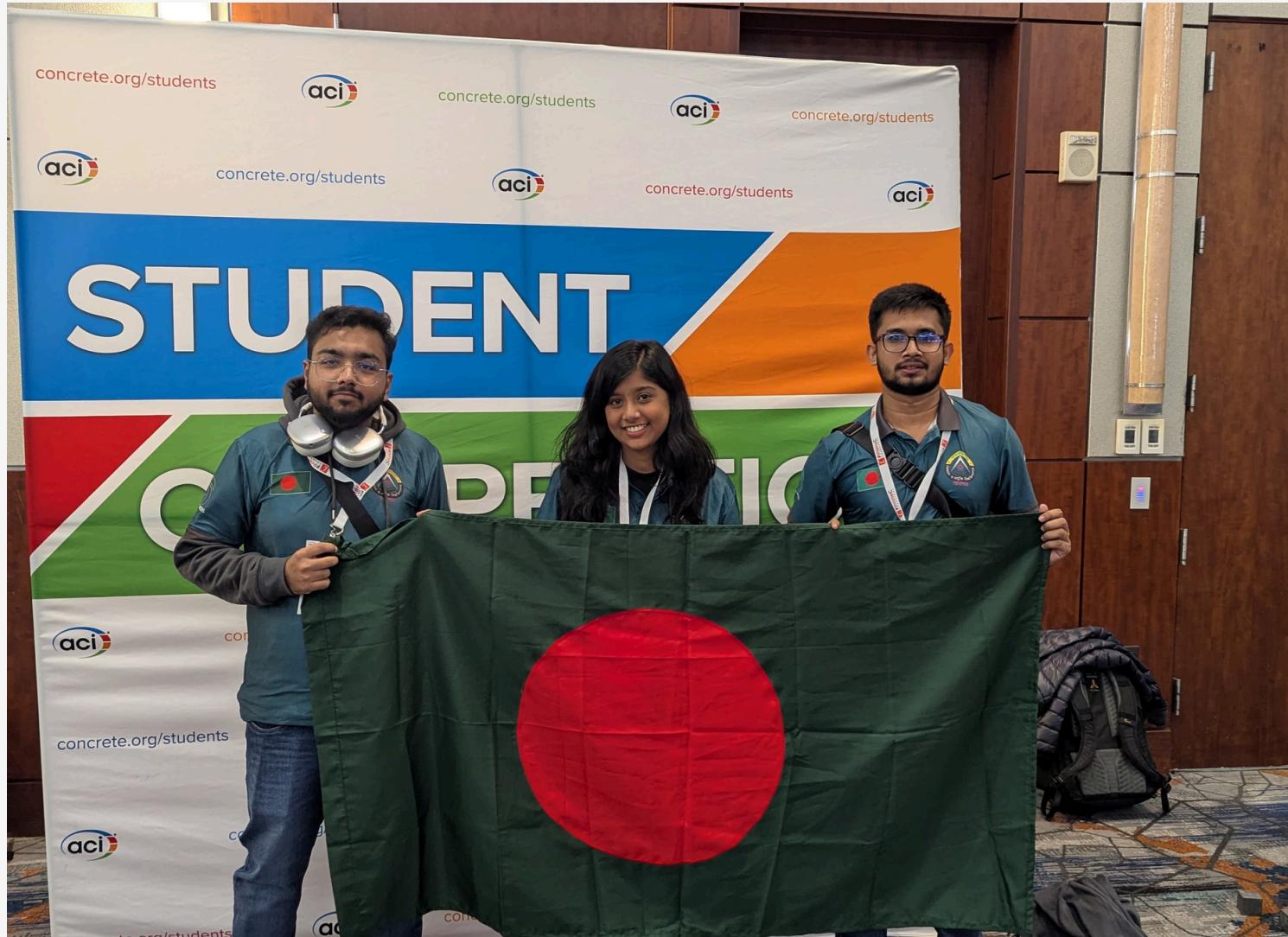
Marketing  
3450000

23%

# Our Achievements



**Champion** in National Concrete Solution Competition By ACI CUET



our world ranking 17<sup>th</sup> at  
American Concrete Institution ,  
Baltimore ,USA



Got 2<sup>nd</sup> Highest funding in UIHP

# OUR ADVISORS



ABDULLAH AL NOMAN  
**LECTURER**  
Dept. Of CEE, SUST



Dr. Mohammad  
Shahidur Rahman  
**Professor & Head**  
Dept. Of CEE, SUST



NAHFUZUN NOBI  
MAHIM  
**TEAM LEAD TECHNICAL SUPPORT  
ENGINEER**  
LAFARGEHOLCIM BANGLADESH PLC.



# THE PERFECT BLEND OF INNOVATION & WISDOM



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FADEELAH MAHMOOD

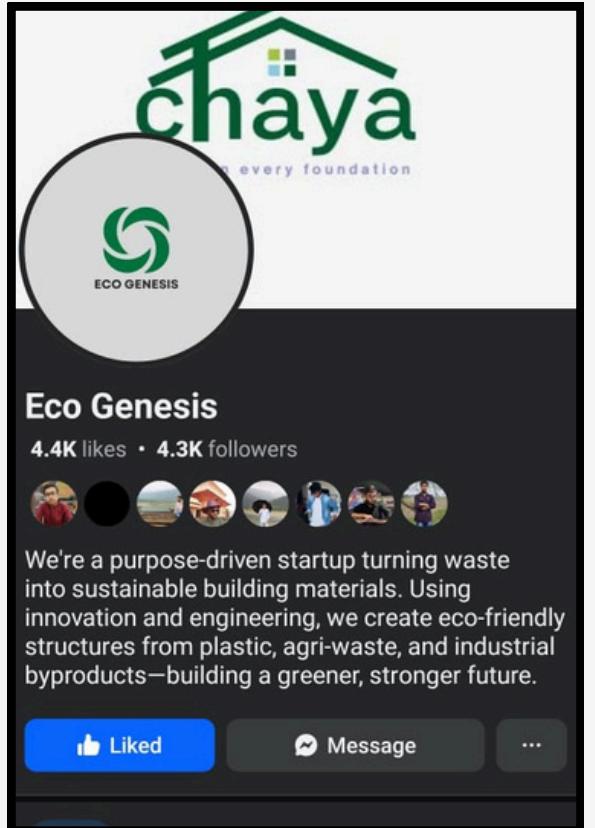
Dept. Of CEE, SUST

CHIEF MARKETING OFFICER

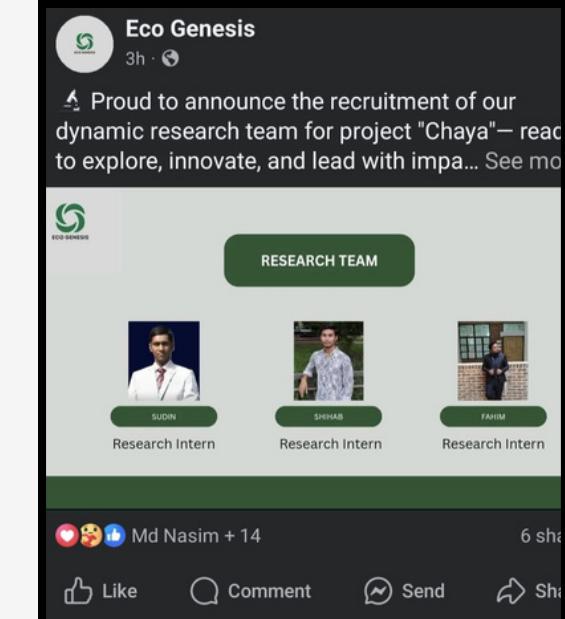
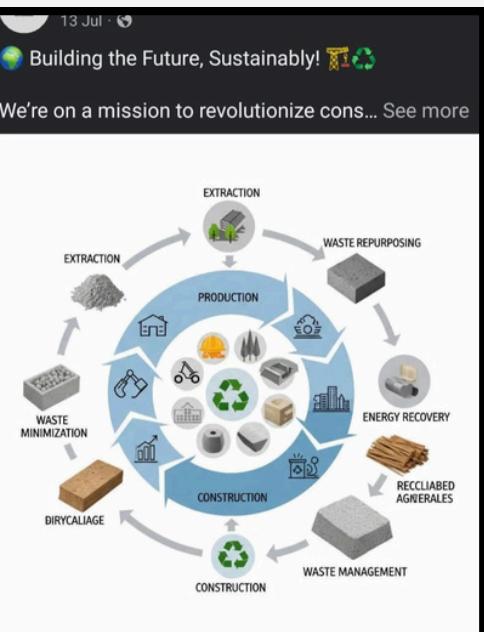
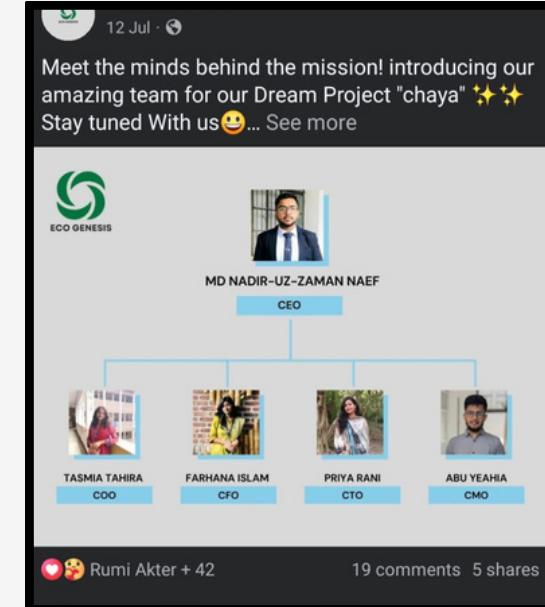
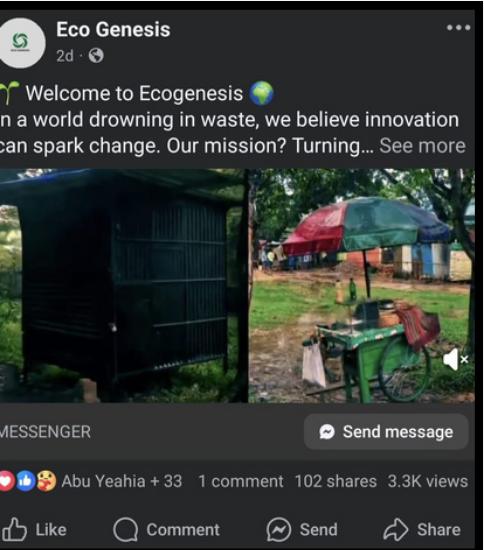


# Social Media Engagement

FACEBOOK



FOLLOWERS COUNT :  
4.4K



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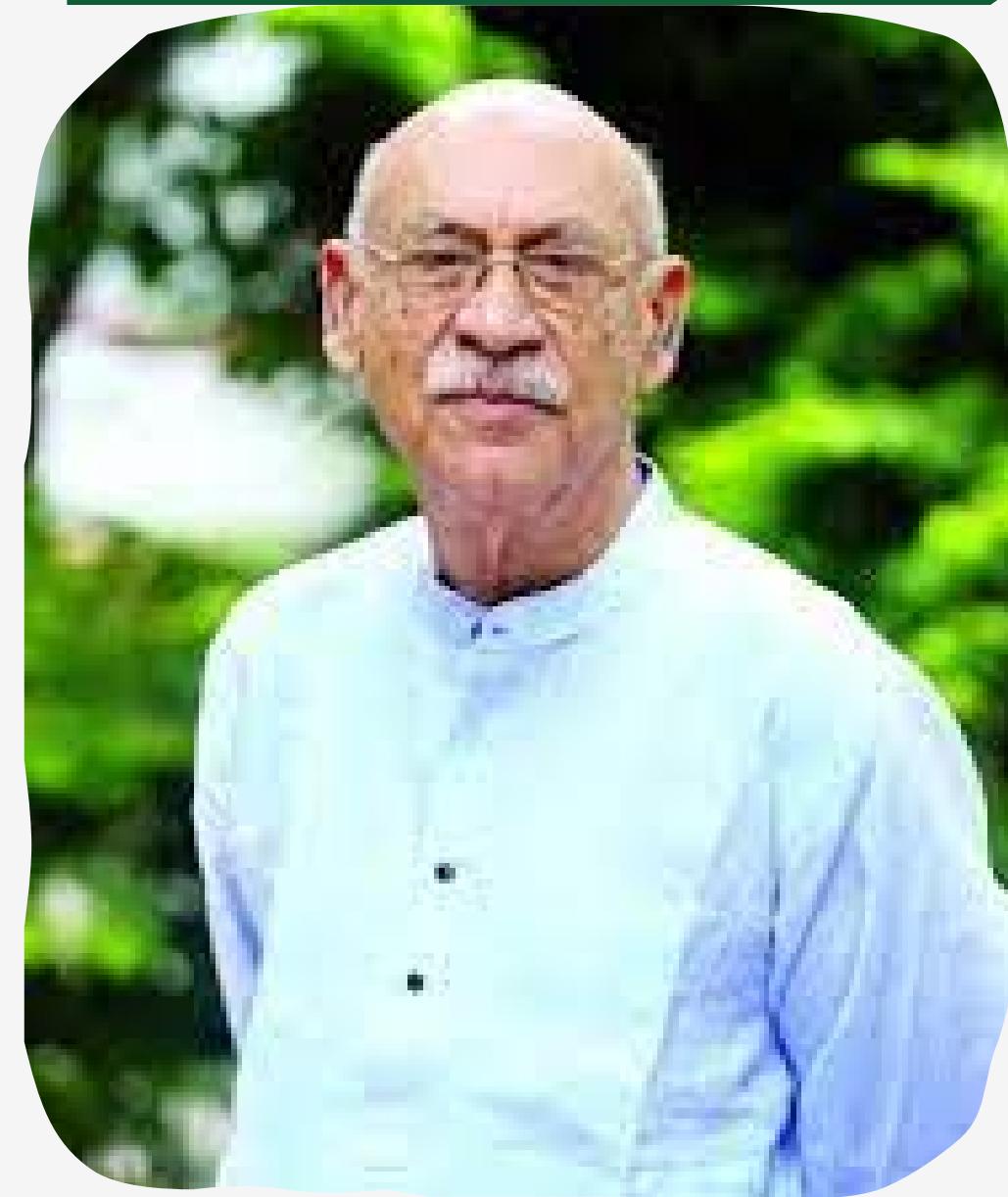


<https://www.ecogenesis.com>



ecogenesis21@gmail.com

Brand Ambassador



Abul Hayat  
Bangladeshi Actor

# Thank You