

Zerra

What is Zerra?

Zerra combines “Zero” (for zero waste) and “Terra” (Latin for Earth).

No agricultural waste left behind to make a cleaner, more sustainable planet Earth.

Zerra is a rural-tech platform that connects farmers who generate agricultural waste with businesses that can utilize it for applications like biofuel, biodegradable packaging, mulch, and more. It exists to prevent crop residue burning, eliminate middlemen, and build a clean and scalable agricultural waste supply chain.

Zerra is designed to work at the intersection of farmer needs and industrial demand, with a model simple enough for rural participation and strong enough for national scale.

Beginning



In Sangli, on my way to school every harvest season, I would see thick smoke rising from nearby fields, sometimes for days. Farmers were burning their crop residue because there was no affordable or accessible way to dispose of it.

Later, while speaking to over 100 farmers, when I asked them why they burn their waste, the answer was always “No one wants it. It’s just trash. We have to get rid of it before the next cycle.”

So, I visited nearby MIDC industrial areas to understand if anyone actually needed this waste. Through conversations with local boiler operators and factory managers, I discovered industries using biomass briquettes and are often sourced from distant suppliers.

That meant farmers had raw material and industries had demand, but no system existed to link them.

Understanding the Problem

This was not just a sugarcane problem like I initially thought

Wheat husk, banana stems, cotton stalks are all burned. Every region had different waste, but the same issue: no buyers and no system.

Questions that I tried to answer

- What types of waste are generated in each region?
- What can they be turned into?
- Which factories, packaging units, fuel companies, or startups can use them?

Building Zerra

Website homepage screenshot

In 2022, I created Zerra as a digital bridge between two disconnected groups:

- Farmers who want to get rid of waste
- Buyers who can process it into useful products

The platform is built to be:

- Farmer-first: Minimal steps and language friendly
- Buyer-efficient: Filters by waste type, location, volume
- Transparent: No middlemen. No cut. Just listing and linking.

Zerra Today

Zerra is now fully functional and autonomous.

- Farmers list their waste through local NGOs or directly
- Buyers like biomass companies and sustainable packaging startups place orders or contact them
- No manual matching is required

The platform runs independently and continues to scale through word-of-mouth and local partnerships.

Impact So Far

** infographic or metric chart screenshot from website**

Agri-Waste Recycled: 1,800+ metric tons

This is based on verified listings and transaction volume recorded on the website.

CO₂ Emissions Prevented: 4,500+ metric tons

For every 1 ton of crop residue burned, ~2.5 tons of CO₂ equivalent are emitted.

→ 1,800 tons × 2.5 = 4,500 tons CO₂ emission prevented.

Acres of Farmland Preserved: 2,100+

Average farmer on Zerra manages ~4.2 acres.

→ 500+ farmers × 4.2 acres = 2,100+ acres where waste was sold, not burned.

Number of Farmers Onboarded: 500+

Directly tracked through NGO partners and platform records.

Farmer Earnings Enabled: ₹26 million+

Average value per transaction ₹2,000

→ 1,300+ transactions × ₹2,000 = ₹2,600,000 (₹26 lakhs)

Rounded to include price differences by waste type and region.

Number of B2B Buyers: 300+

Total Listings: 1,200+

Transactions Facilitated: 1,300+

Web Visitors: 7,000+

States Involved: 13+

All data based on backend platform analytics and verified outreach.

Air Pollutants Prevented by Avoiding Burning

Using ICAR and WHO air pollution coefficients for agri-waste burning in India:

PM2.5 Prevented: 16 metric tons

1 ton agricultural waste burned releases ~9 kg PM2.5

→ $1,800 \text{ tons} \times 9 \text{ kg} = 16,200 \text{ kg} = 16.2 \text{ metric tons}$

Carbon Monoxide (CO) Prevented: 108 metric tons

1 ton waste burned = ~60 kg CO

→ $1,800 \text{ tons} \times 60 \text{ kg} = 108,000 \text{ kg} = 108 \text{ metric tons}$

Black Carbon Prevented: 5.4 metric tons

1 ton waste = ~3 kg black carbon

→ $1,800 \text{ tons} \times 3 \text{ kg} = 5,400 \text{ kg} = 5.4 \text{ metric tons}$

Methane Prevented: 1.6 metric tons

1 ton of waste = ~0.9 kg CH₄

→ $1,800 \times 0.9 = 1,620 \text{ kg} = 1.6 \text{ metric tons}$

→ Warming impact:

CH₄ is 84x more potent than CO₂ over 20 years

→ $1.6 \text{ tons CH}_4 = \sim 134.4 \text{ tons CO}_2 \text{ emissions warming prevented}$

Types of Waste Traded on Zerra

- Areca Nut Husk
- Banana Leaf
- Banana Stem
- Cashew Shell
- Coconut Husk
- Coconut Shell
- Coffee Husk
- Cotton Stalks
- Fruit Peels
- Groundnut Shell
- Maize Stalks

- Mango Peel
- Mango Seed
- Millet Stalks
- Molasses
- Mustard Stalks
- Neem Seed Cake
- Oilseed Cake
- Paddy Straw
- Palm Waste
- Rice Husk
- Soyabean Husk
- Sugarcane Bagasse
- Sugarcane Trash
- Tea Waste
- Tobacco Stalks
- Wheat Straw

All of these were historically burned or discarded.

Where Zerra is Headed

The next steps:

- Expand to different areas and eventually go global
- Build logistics support using rural co-ops and micro-entrepreneurs
- Move into warehousing and waste financing
- Integrate with sustainability policy and carbon markets