

# TraceCommunity — 1-Page Submission Summary

Title: TraceCommunity — Community Supply Chain Provenance

## Problem:

Small cooperatives and community producers lack low-cost, trustworthy provenance for agricultural products (milk, eggs, etc.)

## Solution:

TraceCommunity is a lightweight blockchain prototype that records immutable batch metadata and checkpoints (consortium).

## Key features:

- Batch creation by producers with IPFS-backed evidence.
- Role-based checkpoints (transporters, inspectors) adding immutable events.
- Public verification page + QR code for consumers and regulators.
- Minimal on-chain footprint; heavy files stored off-chain for cost-effectiveness.
- Designed for low-cost consortium deployment or L2 for scalability.

## Tech stack (prototype):

- Smart contracts: Solidity (OpenZeppelin AccessControl)
- Local blockchain: Hardhat (demo), deployable to EVM-compatible networks
- Frontend: React + ethers.js, MetaMask integration
- Off-chain storage: IPFS (or simple file server for demo)

## Impact:

Increases trust and price transparency for community products, reduces disputes, empowers local cooperatives to track their supply chain.

## Demo readiness:

Smart contract, deploy & seed scripts, React demo UI and sample data ready. We can demonstrate live on a laptop.

## Contact:

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