Silver Team B

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The Shea Nut Press
The Problem

- Shea nuts: untapped, abundant resource
- Shea butter: valued resource locally & internationally
- Butter production: potential secondary income
- Current production process: slow (3-4 days), inefficient

West Sahel Africa
Customer/Market Data

- **Customer**: women & children in New Longoro, Ghana (contact through D-Lab)

- **Product**: Shea butter/kernels: 3\textsuperscript{rd} most exported product in Burkina Faso - $7\text{mln}/yr

- **Market**:
  - Cooking fat
  - Hair care & lotion
  - Chocolate
  - Luxury cosmetics
Benchmarking/Technical Data

- Each Shea tree produces 4.5kg per season
- 50% of Shea harvest collected
- 50% consumed, leaving the rest for export
- 35-40% oil extracted now
- goal: 1.27kg/hr Shea nut processing
- Auger design reaches 10kg/hr, but unsustainable
Summary of Core Needs

- **Product description**: press to convert shea nuts into shea butter
- **Intended customer**: Women & children of New Longoro
- **Market**:
  - cooking fat
  - hair care & lotion products
  - Chocolate
  - high-end cosmetics
- **Customer needs**:
  - Local materials
  - Transparent design
  - Low cost
  - Efficiency
  - High throughput
What we learned/Future direction

- Nuts crush better under shear than compression; ideally both independently
- Grinding plates critical component
- Auger/mill design better than press
- Pursue mill design with modifications
Thank You