The Challenge: Farm Power

In Africa...

Humans: 70%
Animals: 25%
The Challenge: Transportation

- 85% unpaved

Normal:

31 vehicles: 1000 people
Our Solution: The MAPS

- Fuel Economy: Up to 26 km/L
- Transmission: 5-Speed
- Parts: 100% Readily Available Parts Found in Sub-Saharan Africa
- Payload: 1000 kg
- Top Speed: 32 kmh
- Seating: Bench Seating for Passengers
- PTO: PTO to Attachments
- Brakes: Hydraulic Brakes on all Wheels
- Suspension: Suspension on all Wheels
- Designed by students at Purdue University in West Lafayette, Indiana, USA in partnership with ACREST in Cameroon.
40.6 million smallholder farmers.

$743,000,000 market

Average charge of $0.0019/kg/km

40 million+ metric tons of cassava produced per year in Nigeria.

Can move 10x more cassava than a motorbike.
Our Solution:

AgRover Services moves farmer’s crops from the farm to the market or processing plant.

Farmers therefore only pay for what they use.
## 2 Revenue Streams

**Direct Sales**
- Medium size farms
- Cooperatives
- Agribusinesses

**AgRover Services**
- Owned and operated by MAPS
- Pay-for-use model (taxi)
- Small farms without upfront cash
## Competition Comparison

### vs.

The main technology currently being used in the Ijoun area by farmers to transport their crop is motorbike services. However, the AgRover can carry 10x the volume and is safer on the road.

<table>
<thead>
<tr>
<th></th>
<th>Motor-bike</th>
<th>AgRover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel rate, unloaded (km/L)</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td>Fuel rate, loaded (km/L)</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>Fuel price ($/L)</td>
<td>0.45</td>
<td>0.46</td>
</tr>
<tr>
<td>Payload (kg)</td>
<td>100</td>
<td>900</td>
</tr>
<tr>
<td>Unloaded speed (km/hr)</td>
<td>45</td>
<td>28</td>
</tr>
<tr>
<td>Loaded speed (km/hr)</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Trip (km)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Rate (Naira/kg)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Rate ($/kg)</td>
<td>$0.01</td>
<td>$0.01</td>
</tr>
<tr>
<td>Working day (hr)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Trip time (hr)</td>
<td>0.56</td>
<td>0.86</td>
</tr>
<tr>
<td>Fuel per trip (L)</td>
<td>0.69</td>
<td>0.94</td>
</tr>
<tr>
<td>Cost per trip ($)</td>
<td>$0.31</td>
<td>$0.43</td>
</tr>
<tr>
<td>Trips per day</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Fuel cost per day ($)</td>
<td>$4.32</td>
<td>$3.89</td>
</tr>
<tr>
<td>Kg/day</td>
<td>1400</td>
<td>8100</td>
</tr>
<tr>
<td>Income ($/day)</td>
<td>$7.00</td>
<td>$40.50</td>
</tr>
<tr>
<td>Rate of transport (kg-km/hr)</td>
<td>3,750</td>
<td>21,600</td>
</tr>
<tr>
<td>Profit ($/day)</td>
<td>$2.68</td>
<td>$36.61</td>
</tr>
</tbody>
</table>
**AgRover Services**

- Road (density & quality)
- Number Vehicles
- Ag Production (qty and type)
- Markets (size and locations)

**Location Selection Algorithm**

- New locations

**Local AgRover Services Operations**

- Road info
- Trip Data (load, length, profit, location, etc)
- % Vehicle Usage
- ...

**Local Operation Optimization Algorithm**

- How can we optimize local operations?

**Questions:**

- What actually are the optimal conditions for new locations?
MAPS IN NIGERIA

- Manufactured multiple AgRovers
- Operating AgRover Services in Ijoun since June 2019
- Transported 30+ tons in the first 30 days
- Primary transported item: Cassava (40m+ metric tons/year in Nigeria)
- Return customers
- Breakdowns, Jordan on tech support
- Met with local king and received his blessing
**CURRENT WORK**

- Explore Market Opportunity
- Add customers
  - Job posting
- Increase vehicle utilization time
- Better data collection (app)
NUMBERS - ASSUMPTIONS

• Production and sales as shown in chart:
  • 2 jobs per day. Each:
    • 11 km
    • 1175 kg
    • $0.00186 /kg/km
  • ~$5000 per AgRover
    • $3000 parts and materials
• 15 working days/month
• Assembly lines in years 2 and 5
**NUMBERS**

- **Services:**
  - 2 jobs/day
  - $0.00186/kg/km
- **Sales:** $5000 price

### Yearly Financial Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Expenses</th>
<th>Capital Expenses</th>
<th>Operational Expenses</th>
<th>COGS (cost of goods sold)</th>
<th>SG&amp;A (selling, general and administration)</th>
<th>Total Revenue</th>
<th>Profits</th>
<th>External Investment/grant/etc</th>
<th>Final Cash Balance</th>
<th>Assets (inventory + cash balance)</th>
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</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$80,524</td>
<td>$15,000</td>
<td>$65,524</td>
<td>$49,339</td>
<td>$16,185</td>
<td>$50,651</td>
<td>$(29,873)</td>
<td>$75,000</td>
<td>$45,127</td>
<td>$54,990</td>
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<td>Year 2</td>
<td>$151,820</td>
<td>$20,100</td>
<td>$131,720</td>
<td>$107,025</td>
<td>$24,695</td>
<td>$167,414</td>
<td>$12,475</td>
<td>$-</td>
<td>$57,601</td>
<td>$67,465</td>
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<td>Year 3</td>
<td>$371,301</td>
<td>$8,050</td>
<td>$366,251</td>
<td>$331,677</td>
<td>$34,574</td>
<td>$522,635</td>
<td>$121,067</td>
<td>$(24,695)</td>
<td>$178,669</td>
<td>$188,532</td>
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<td>Year 4</td>
<td>$686,758</td>
<td>$-</td>
<td>$686,758</td>
<td>$639,441</td>
<td>$47,317</td>
<td>$1,208,420</td>
<td>$417,329</td>
<td>$-</td>
<td>$595,998</td>
<td>$605,861</td>
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<tr>
<td>Year 5</td>
<td>$1,343,017</td>
<td>$20,403</td>
<td>$1,322,614</td>
<td>$1,245,829</td>
<td>$76,785</td>
<td>$2,579,990</td>
<td>$989,578</td>
<td>$(24,695)</td>
<td>$1,000,000</td>
<td>$1,009,863</td>
</tr>
</tbody>
</table>

**Profit Chart**

- **MAPS Nigeria Profits**
- **MAPS International Profits**
ASK

• $100k
• Get more vehicles in the market
• Ensure higher up-time
• Drive sales growth hard
THE TEAM

Tyler Anselm  
Co-founder, CTO and Project Implementation Engineer

Bunmi Babajide  
Co-founder, Technical Capacity Development

Jordan Garrity  
Co-founder, Media and Engineering

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ISHOW INNOVATION SHOWCASE

THOUGHT FOR FOOD
TECHCON Connecting to accelerate global development

PLANET FORWARD AT GW
BTN BIG REN NETWORK

EDGE FACTOR
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

SIEMENS Stiftung

CLINTON GLOBAL INITIATIVE UNIVERSITY
VIDEOS

Summary pitch video: https://www.youtube.com/watch?v=nTZe_iOWayE
Footage from Nigeria: https://www.youtube.com/watch?v=pGcMe6cA7JY