RUTF Nigeria Market Assessment

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Speakers

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Organisation Overview & Partnership

- **Save the Children**
  - International NGO that promotes children’s rights, provides relief and helps support children in developing countries.
  - Established in the UK in 1919.
  - Global network of nonprofit organisations supporting local partners in over 120 countries around the world.
  - Helped **15.4 million children** in 2013.

- **GSK GlaxoSmithKline**
  - A science-led global healthcare company. We research and develop a broad range of innovative products in three primary areas of Pharmaceuticals, Vaccines and Consumer Healthcare.
  - We also have a significant global presence with commercial operations in more than 150 countries, a network of 84 manufacturing sites in 36 countries and large R&D centres in the UK, USA, Spain, Belgium and China.

- **Accenture Development Partnerships**
  - Non-profit group within Accenture. Started in 2003 as an employee-driven initiative.
  - Channels business and technology skills to organizations in the international development sector.
  - ADP staffs small teams of Accenture employees on projects mostly in developing countries with non-profit clients.
  - ADP makes consulting services accessible to non-profits through an innovative business model.
Ready-to-Use Therapeutic Food (RUTF) is a key component of treating Severe Acute Malnutrition (SAM), which is linked to dramatically increased childhood mortality

- **700,000 children affected by SAM** in Nigeria (2.2%).
- **Fewer than half** of these children, 320,000 will benefit from CMAM each year (Community-based Management of Acute Malnutrition).
- **UNICEF interested in developing local manufacturing capacity** in strategic countries including Nigeria.
3 key focus areas were identified for detailed investigation

**Objective**

1. **Market Assessment**
   - **Market** – Assess the RUTF market dynamics with an emphasis on Nigeria.
   - **Demand** – Estimate the local demand for RUTF.
   - **Supply** – Determine how to setup an optimized supply chain and associated operating costs and investment.

2. **Sustainable Business Model**
   - Develop a sustainable business model for locally produced RUTF.

3. **Recommendations**
   - Make a recommendation on whether how companies can best enter the Nigerian RUTF market.

**Key Questions**

- **Market**
  - What is the RUTF market size and expected growth?
  - What does the RUTF value chain look like?
  - Who are the players and what are their capabilities?

- **Demand**
  - What are the drivers of demand in Nigeria?
  - What is the market price?

- **Supply**
  - At what price can RUTF be produced locally?
  - Are there low cost sourcing alternatives?
  - What are key production challenges and risks?
  - How much investment is needed?

- **Sustainable Business Model**
  - What are the key success factors?
  - What are potential scenarios for entering the market?
  - What should the go to market strategy be?
  - What would the high level operating model look like?
  - What is the associated business case?
  - What are the risks?

- **Recommendations**
  - What is the preferred method of market entry?
  - What is the most appropriate partnering strategy?
  - Is there alignment on the recommendations?
  - What would the rough timing be?
  - What are next steps?
A team of 3 consultants spent 3 months in Nigeria, primarily Lagos and Abuja, and engaged 60+ stakeholders when conducting the assessment.

### Approach

- **Assessment Design**
  - Develop project plan
  - Conduct initial interviews

- **Market Assessment**
  - Conduct detailed assessment of market dynamics
  - Understand local need and demand for RUTF
  - Understand supply chain and investment requirements and costs

- **Business Model**
  - Assess options for go to market strategy and key risks
  - Develop financial model and business case

- **Recommendations**
  - Develop recommendations for RUTF in Nigeria

### Outputs

#### Market / Demand Assessment
- Market Players / Dynamics
- Market Size

#### Supply Assessment
- Sourcing Plan
- Should Cost Model
- Ramp-Up Requirements
- Investment Requirements

#### Business Model
- Key Success Factors
- Go to Market Strategy
- Operating Model
- Alternate Options
- Challenges and Risks
- Business Case

#### Recommendations
- Market Entry
- Partnering Model
- Lessons Learned
- Next Steps

### Local Companies Interviewed
- Solina Health
- Biochemical Derivatives Limited
- Tyonex Pharmaceuticals
- Halid Pharmaceuticals

### Direct Materials Assessment
- Over 40 suppliers contacted

### Capital Investment Assessment
- Over 20 suppliers contacted

### External Resources
- UNICEF
- Project Peanut Butter
- GAIN
- American Peanut Council
- JAM
Market Dynamics

The RUTF market in Nigeria presents real opportunities, but will have challenges in the environment

• UNICEF is responsible for **80% of global RUTF purchases**, worth $125m, and is the only purchaser in Nigeria ($16m, 4,500MT).

• Nutriset is responsible for **50% of global sales**, which increases to 70% when including the PlumpyField network.

• **Generic alternatives to PlumpyNut** are becoming more common, such as MANA Nutrition, Tabatchnik Fine Foods, and Diva Nutrition Products, but require registered patents.

• The RUTF market is moderately competitive and mature, and net prices have been **declining over time**, ~10% over 5 years.

• Common barriers to entry for local producers include **technical knowledge, infrastructure**, and **access to raw materials**.

• With state and federal government support, the market **does offer potential**.
Local Supply Assessment

Total supply costs are $35-48 per carton and greatly influenced by economies of scale

<table>
<thead>
<tr>
<th>Output</th>
<th>Capital</th>
<th>Cost per Carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>250MT</td>
<td>$1.1M</td>
<td>$47.68</td>
</tr>
<tr>
<td>500MT</td>
<td>$1.3M</td>
<td>$41.78</td>
</tr>
<tr>
<td>1000MT</td>
<td>$1.5M</td>
<td>$38.75</td>
</tr>
<tr>
<td>2000MT</td>
<td>$2.2M</td>
<td>$36.57</td>
</tr>
<tr>
<td>4000MT</td>
<td>$3.4M</td>
<td>$35.17</td>
</tr>
</tbody>
</table>

Comments

Direct Materials
- Represent majority of supply costs
- $4.50/carton higher than benchmark costs
- May be sourced from local processors in most cases
- Quality concerns with locally sourced peanuts (aflatoxins and salmonella)

Manufacturing

Investment
- Significant land and building investment needed
- Economies of scale in equipment investment

Operations
- Labor is inexpensive compared to benchmark
- Labor also affected by economies of scale
- Plan needed to address various operating issues

Startup
- Full startup will take 14-20 months to complete
Direct Materials Summary

Local processing is available for all direct materials except milk; however, only peanuts and oil are produced locally and have cost and quality concerns.

- **Peanuts**: Nigeria is the *third largest producer in the world* by volume. Locally roasted peanuts are a *similar price* to imports, but quality is a concern and importing is recommended initially. Limited choices for high quality, large scale local processors.

- **Oil**: *Palm oil production is very high*, but usually of low quality. Local palm oil is *~60% more expensive* than benchmark due to supply shortages. Soybean oil is also produced locally, but in much lower quantities.

- **Sugar**: Nigeria is the *largest sugar refiner in West Africa*. Government initiative to increase local raw sugar production. Prices are *globally competitive* and slightly better than US.

- **Milk**: A number of local companies process imported milk powder; however, most are *unwilling to provide wholesale*. Importing has a *relatively low tariff* (~17%).

- **Vitamin Mix**: *Two local, WFP approved* vitamin mix suppliers. Vitamin mix can also be procured through GAIN.

- **Packaging**: *Several local film and carton suppliers* meet requirements.
### Manufacturing Cost Summary by Capacity

There are significant economies of scale in investment costs and to a lesser extent operations costs.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Equipment</th>
<th>Operations</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 MT</td>
<td>111kg/hr</td>
<td>$0.30-0.55M</td>
<td>$0.95-1.20M</td>
</tr>
<tr>
<td>500 MT</td>
<td>222kg/hr</td>
<td>$0.30-0.55M</td>
<td>$1.15-1.40M</td>
</tr>
<tr>
<td>1000 MT</td>
<td>444kg/hr</td>
<td>$0.30-0.60M</td>
<td>$1.35-1.65M</td>
</tr>
<tr>
<td>2000 MT</td>
<td>888kg/hr</td>
<td>$0.45-1.10M</td>
<td>$1.85-2.55M</td>
</tr>
<tr>
<td>4000 MT</td>
<td>1777kg/hr</td>
<td>$0.80-1.60M</td>
<td>$3.00-3.80M</td>
</tr>
<tr>
<td>Land</td>
<td>$50K</td>
<td>$205K</td>
<td>$230K</td>
</tr>
<tr>
<td>Building</td>
<td>$0.60M</td>
<td>$1.30M</td>
<td>$1.85M</td>
</tr>
<tr>
<td>Investment Total</td>
<td>$0.95-1.20M</td>
<td>$1.35-1.65M</td>
<td>$1.85-2.55M</td>
</tr>
<tr>
<td>Labour</td>
<td>$130K</td>
<td>$205K</td>
<td>$230K</td>
</tr>
<tr>
<td>Power</td>
<td>$60K</td>
<td>$120K</td>
<td>$160K</td>
</tr>
<tr>
<td>Freight</td>
<td>$10K</td>
<td>$30K</td>
<td>$60K</td>
</tr>
<tr>
<td>Other</td>
<td>$30K</td>
<td>$90K</td>
<td>$165K</td>
</tr>
<tr>
<td>Operations Total</td>
<td>$230K</td>
<td>$445K</td>
<td>$615K</td>
</tr>
<tr>
<td>Total</td>
<td>$305K</td>
<td>$615K</td>
<td>$890K</td>
</tr>
</tbody>
</table>
The business case becomes positive at an output of 700MT per year with the current assumptions.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>250 MT</th>
<th>500 MT</th>
<th>1000 MT</th>
<th>2000 MT</th>
<th>4000 MT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>$1,000,000</td>
<td>$2,000,000</td>
<td>$4,000,000</td>
<td>$8,000,000</td>
<td>$16,000,000</td>
</tr>
<tr>
<td><strong>Material Costs</strong></td>
<td>$550,000</td>
<td>$1,100,000</td>
<td>$2,250,000</td>
<td>$4,500,000</td>
<td>$8,950,000</td>
</tr>
<tr>
<td><strong>Labor Costs</strong></td>
<td>$130,000</td>
<td>$145,000</td>
<td>$205,000</td>
<td>$230,000</td>
<td>$255,000</td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td>$1,050,000</td>
<td>$1,250,000</td>
<td>$1,500,000</td>
<td>$2,000,000</td>
<td>$3,400,000</td>
</tr>
<tr>
<td><strong>Overheads</strong></td>
<td>$180,000</td>
<td>$250,000</td>
<td>$370,000</td>
<td>$600,000</td>
<td>$1,000,000</td>
</tr>
<tr>
<td><strong>EBIT</strong></td>
<td>$150,000</td>
<td>$500,000</td>
<td>$1,200,000</td>
<td>$2,700,000</td>
<td>$5,750,000</td>
</tr>
<tr>
<td><strong>Net Income</strong></td>
<td>$150,000</td>
<td>$500,000</td>
<td>$1,200,000</td>
<td>$2,700,000</td>
<td>$5,700,000</td>
</tr>
<tr>
<td><strong>NPV</strong></td>
<td>($850,000)</td>
<td>($350,000)</td>
<td>$900,000</td>
<td>$3,350,000</td>
<td>$8,650,000</td>
</tr>
<tr>
<td><strong>Break-even</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>4 years</td>
<td>3 years</td>
<td>3 years</td>
</tr>
</tbody>
</table>

Note: value add breakeven used (including working capital)
If the proper scale is achieved and risks mitigated, local production of RUTF in Nigeria can be a profitable and sustainable business

Key Success Factors
• Success in local RUTF production is determined by a number of factors – the most important of which is achieving scale.

Entrant Profile
• An ideal candidate for local RUTF production will have significant revenue, $10M+, and experience in high quality food processing.

Partnering
• A company has a number of partnering options to overcome challenges – from hiring a contractor to forming a joint venture.

Market Opportunities
• Expected RUTF selling price in the range of $55 per carton.
• A market share of 50%+ ($8M) is achievable given there is no current local producer.
• In short term there is potential to export to West Africa, and the potential to develop related products such as RUSF in the medium term.

Business Case
• The net present value (NPV) becomes positive at production of roughly 700MT.
• The business case becomes increasingly better with increased production.
• Key assumptions are selling price, investment cost, volume and tax breaks.

Risks
• Unexpected reduction in UNICEF purchases is the largest risk.
• Other risks include local competition, unexpected costs and changing commodity prices.

Recommendation
• 2000MT per year provides the best balance of profitability and risk mitigation.
• First to market will significantly reduce the market attractiveness to other companies.
A local RUTF manufacturer can make a number of positive economic and social impacts on the Nigerian community

**Sustainability Goals**

**Short Term**
1. Create local jobs and pay fair wages to factory workers
2. Source materials locally
   - Source soybean oil, sugar and most palm oil locally
   - Initial sourcing strategy has 55% local value added content with potential for 70% over time
3. Increase skilled workforce level
4. Increase RUTF buyers
   - Reduce reliance on donor funding by promoting government purchases
5. Source peanuts locally from farmers
6. Teach Good Agricultural Practices (GAP)
   - Educate farmers to reduce aflatoxin risk
   - More sustainable farmland
7. Increase SAM awareness in communities
8. Product Diversification
   - E.g. supplementary foods

**Long Term**

**ECONOMIC**
1. Local job creation
4. Increase RUTF buyers
8. Product Diversification

**SOCIAL**
1. Fair wages
6. GAP
7. SAM awareness

**ENVIRONMENTAL**

Note: reliance on donor funding is a key concern in the long term
Conclusions and key factors for success:

- In Nigeria, annual production of **more than 700MT is expected** to achieve the necessary economies of scale to overcome the high capital investment.

- A **food safety program is crucial** given the high quality standards set by UNICEF.

- **First mover advantage could be key** to success, due to the period of increased market share and pricing power, which may be the difference in achieving a positive return on investment.

- Having **excess manufacturing space** for an RUTF production line and material storage would significantly reduce the capital requirements.
Call to Action and Next Steps

This study’s findings demonstrate the viability of local production of RUTF Nigeria

However, for this to become a reality, UNICEF and the extended CMAM Community (NGOs) need to:

1. **Demonstrate a commitment** to RUTF purchases and local production in particular.
2. Advocate the involvement of both government at state and federal level in local production.
3. **Connect stakeholders** from different sectors.

To **stimulate this process** Save the Children will:

1. **Inform Nigerian Government bodies, UNICEF, and business companies** of the opportunities that exist for supporting or leading the manufacture of RUTF in Nigeria.
2. **Inform different global and regional platforms** (SUN movement, CMAM forum, ENN, Global Nutrition Cluster, Regional Nutrition Working Group) of the opportunities that exist for supporting or leading the manufacture of RUTF in Nigeria.
Report details

Find the full report and summary info graphic at:

Questions?