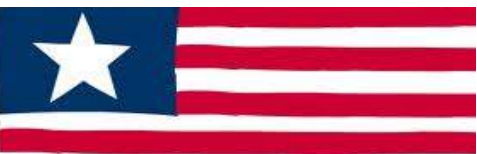


A SPECIAL ECONOMIC ZONE STRATEGY FOR DEVELOPMENT IN LIBERIA



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Outline

- SEZ Overview
- Iron ore
- Agriculture
 - ▣ Cocoa
 - ▣ Rubber
 - ▣ Palm oil
- Conclusions

The SEZ Opportunity

- Credibility
 - ▣ Governance
 - ▣ Regulation
- Clustering
 - ▣ Human Resources
 - ▣ Transfer of technology
 - ▣ Infrastructure
 - ▣ Lower investment for impact

The Role for Rules

“In too many places, weak or outdated rules hold people back. Some rules limit who can sell power, so electricity is expensive. Others fail to contain crime. Others make it difficult to start a business or open a plant. Because of this, firms build new factories not in places where the need for work is highest, but in places where electricity is inexpensive, people and property are safe, and doing business is relatively easy. The few workers who manage to migrate from places with inefficient rules to places with better rules end up earning wages that are many times higher than what they can earn in the places they leave behind.”

-- Paul Romer, Charter Cities

An SEZ offers a chance to start again with better rules...

What do companies want?

Table 5.1 Criteria for Selecting an Investment Location according to Surveyed SEZ Firms (Rankings by Country, Top Five Highlighted)

<i>Investment criteria</i>	<i>African zones</i>	<i>Non-African zones</i>
Cost and quality of utilities	1	3
Access to transport infrastructure	2	2
Business regulatory environment	3	5
Tariffs, duties, and rules of origin	4	8
Level of corporate taxes	5	6
Access to highly skilled labor	6	4
Access to suppliers	7	7
Access to low-cost labor	8	1
Availability/cost of land and buildings	9	10
Access to local and regional markets	10	9
Access to technology	11	11

Source: SEZ investor surveys.

SEZ Performance Study

SEZ in Liberia cannot affect these good performance factors

- ▣ National investment climate and national competitiveness
- ▣ Access to a large local/regional market

Within an SEZ, these factors are correlated with good performance:

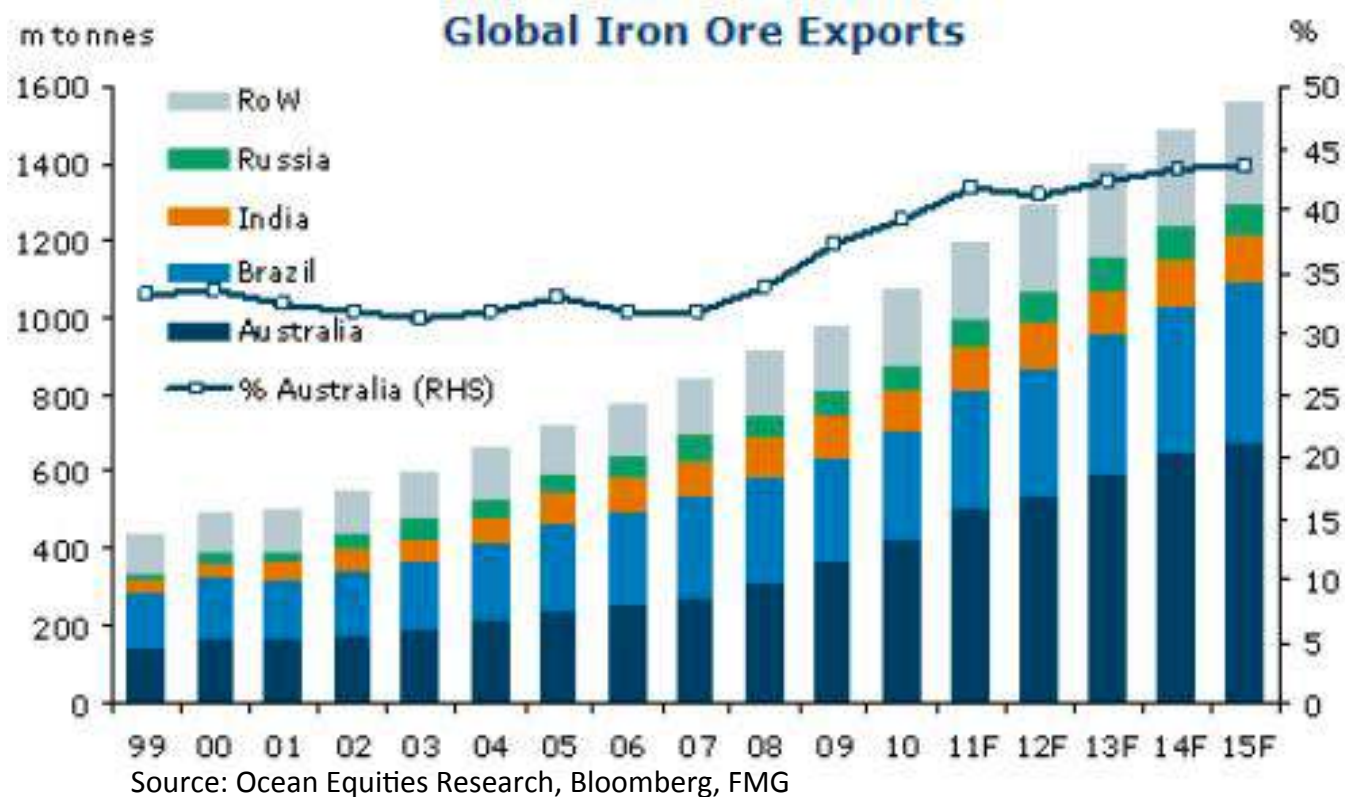
- ▣ Transport and trade facilitation
- ▣ Infrastructure quality especially reliable power
- ▣ Business registration and licensing aspects

Outside a zone or wide-area SEZ

- ▣ Main problem in Africa: positive aspects of the zones (e.g., infrastructure, services, reduced corruption) tend to stop at the gate
- ▣ Wide-area SEZ (growth poles) can offer better links between infrastructure and an industrial park or enclave SEZ

Opportunity for wide-area SEZ from interior to port?

Iron Ore - Exports

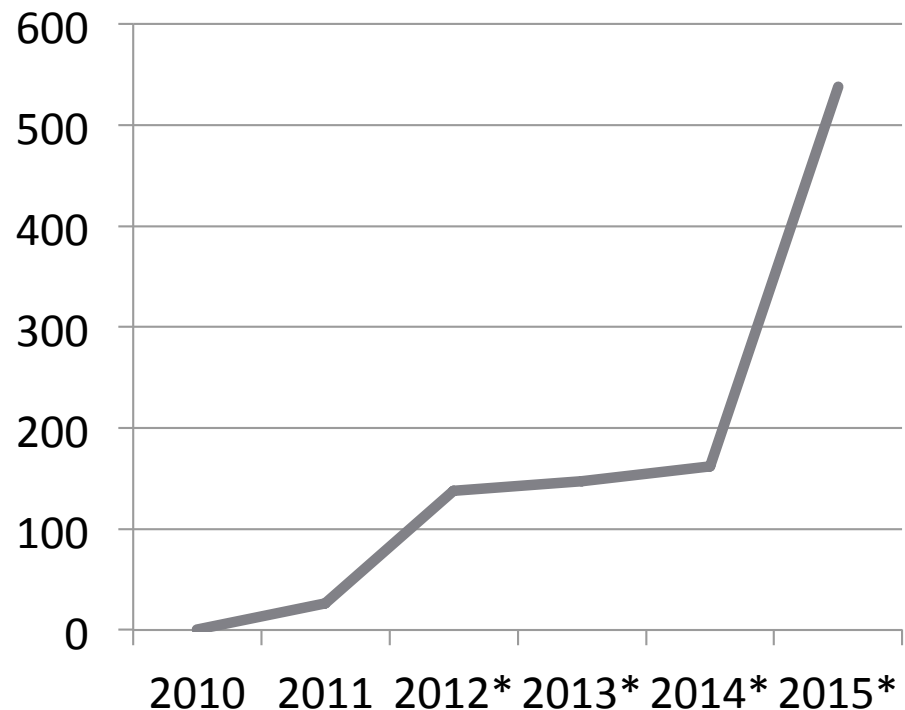


- More than 60% of imports go to China.

Iron Ore

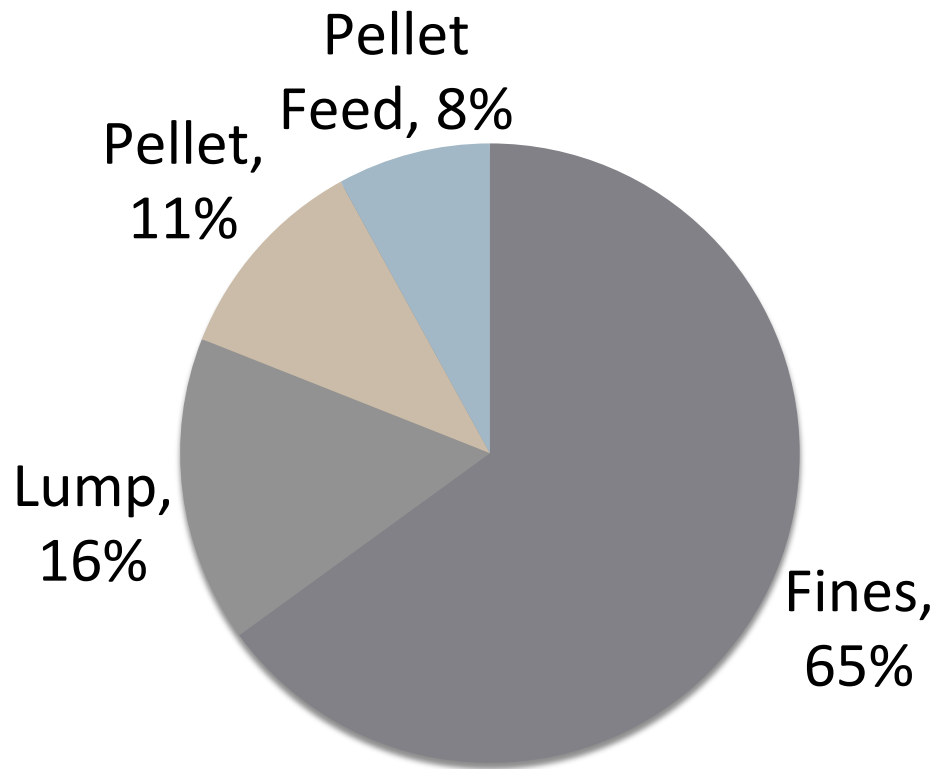
- Largest mining opportunity
 - ▣ More than 3,000 metric tons of estimated reserves
- Liberia already taking advantage of opportunity
 - ▣ 2011: first iron ore exports since conflict
 - ▣ Exports to increase rapidly over next several years
- Regional Opportunity
 - ▣ “Revamped” mining code in Guinea
 - ▣ Private industry concerns
 - ▣ BHP exited Mount Nimba iron ore project

Iron Ore Exports (\$M)

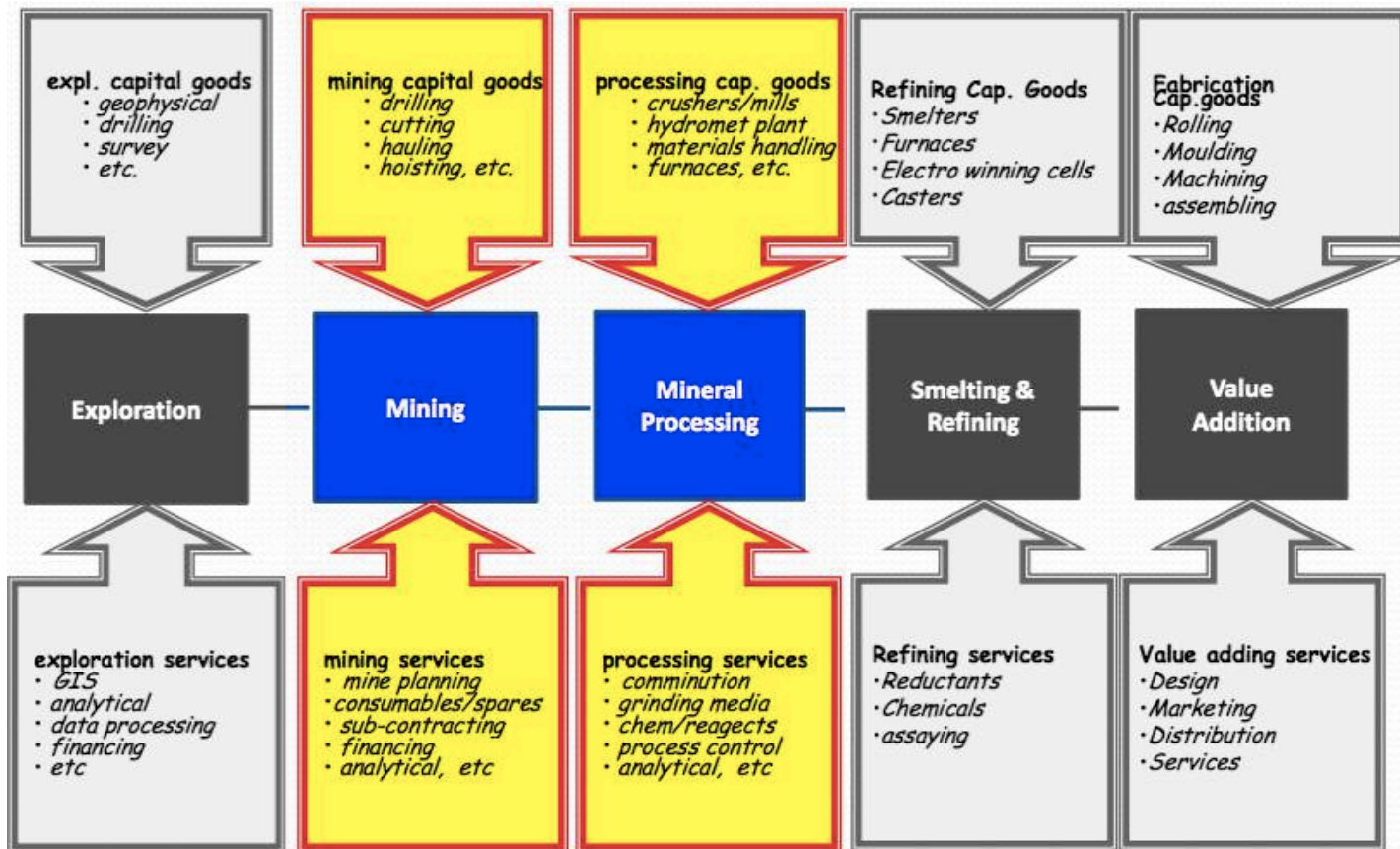


Source: IMF, *Projected

Iron Ore Seaborne Market



Iron Ore



Source: *Diversifying a Mineral Based Economy*, EcoPartners

Iron Ore – SEZ Opportunities

- Little down-market potential
- SEZ activities focusing on processing iron ore into shippable products
- Potential Catalyst for upstream SEZ activities
 - ▣ Power generation
 - ▣ Transportation, including rail, road, and port
 - ▣ Residential infrastructure and services

Agriculture

LIBERIA

Cumulative Value (Domestic Market Output)	\$27,170,844,791
Domestic Output 2030 est.	\$2,906,617,585
Cumulative Value (Export Market Output)	\$13,666,867,608
Export Output 2030 est.	\$1,761,888,367
Cumulative Value (Total Midstream Market)	\$40,837,712,399
Total Midstream Output 2030 est.	\$4,668,505,952
Cumulative Value (Upstream & Downstream Value Chain)	\$11,278,980,430
Up/Down Value Chain Output 2030 est.	\$1,499,938,130
Cumulative Market Value	\$52,116,692,829
Total Agricultural Value Chain Output 2030 est.	\$6,168,444,082

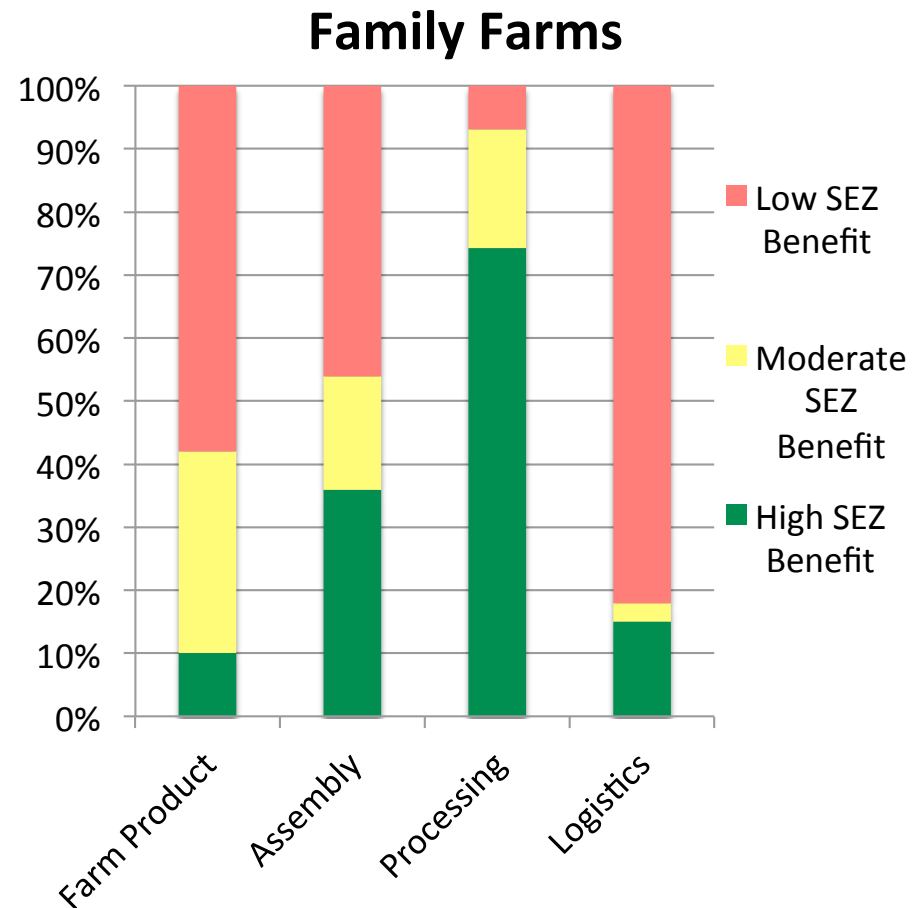
Agriculture

Agriculture Market Sizing	Units	Liberia	West Africa	West Africa Subregion
Total Land Area	Ha	9,736,842	511,091,400	353,858,000
Potential Agricultural Land	Ha	3,700,000	236,000,000	70,521,000
Cultivated Cropland	Ha	563,080	94,568,471	19,789,224
Agricultural Output (Total)	Tonnes	1,725,190	244,944,188	31,708,477
Agricultural Output (Domestic)	Tonnes	1,644,738	237,958,471	31,045,698
Agricultural Output (Export)	Tonnes	104,145	6,985,717	662,779
Domestic Market Value	USD	\$588,856,400	\$89,623,837,898	\$10,247,888,512
Export Market Value	USD	\$197,774,000	\$10,247,641,000	\$836,188,000
Total Estimated Market Value	USD	\$786,630,400	\$99,871,478,898	\$11,084,076,512

Source: Worldbank and FAO

Agriculture Costs

- High SEZ Benefit
 - ▣ Marketing; Packaging & Consumables; Loading, Storage & Plant R&M; Energy & Machine Operation
- Moderate SEZ Benefit
 - ▣ Seed, Fertilizer & Chemicals; Vehicle Hire; Vehicle Operation & Maintenance; Overhead, License, Fees & Management
- Low SEZ Benefit
 - ▣ Hired Labor; Spraying & Machine Operation; Fees & Crop Levies; Transport to Delivery Point; Depreciation

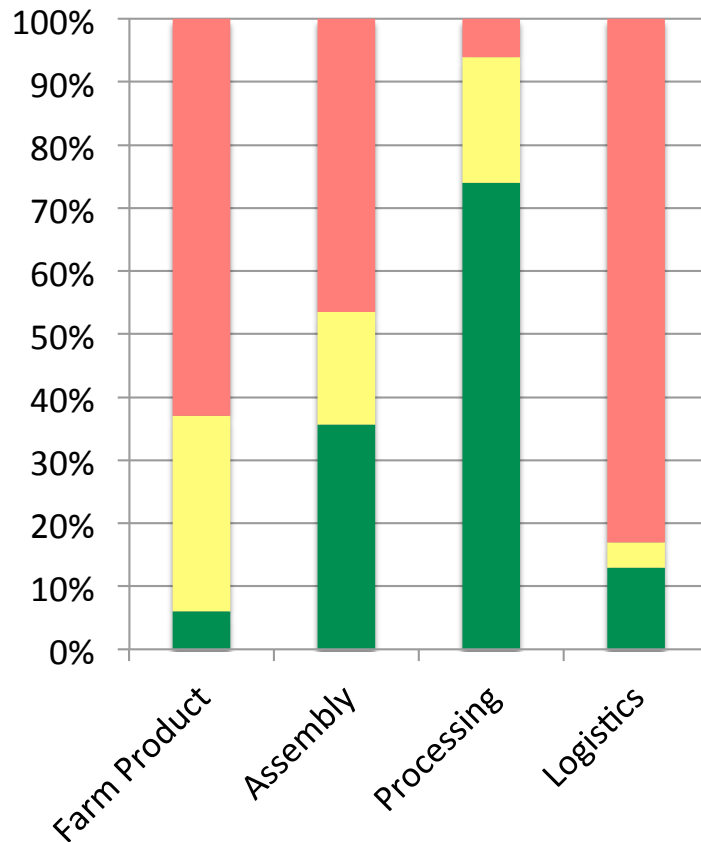


Derived from Nigerian Cost Data

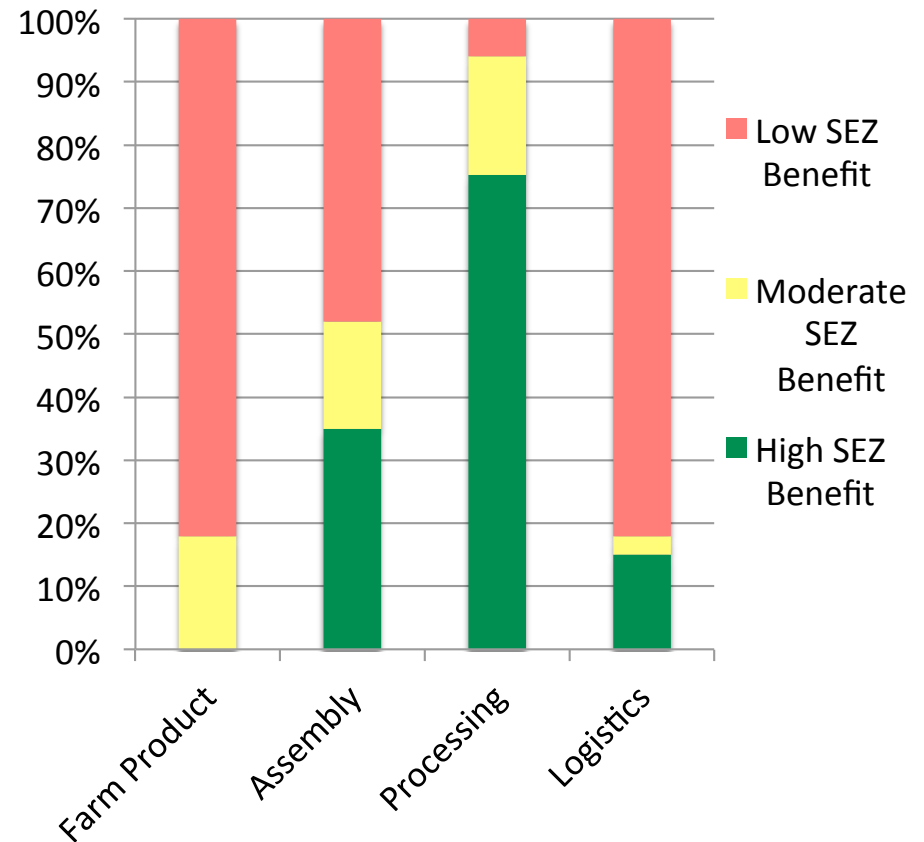
Source: Nigerian Institute of Social and Economic Research (NISER)

Agriculture Costs

Emerging Commercial Farms



Large Commercial Farms

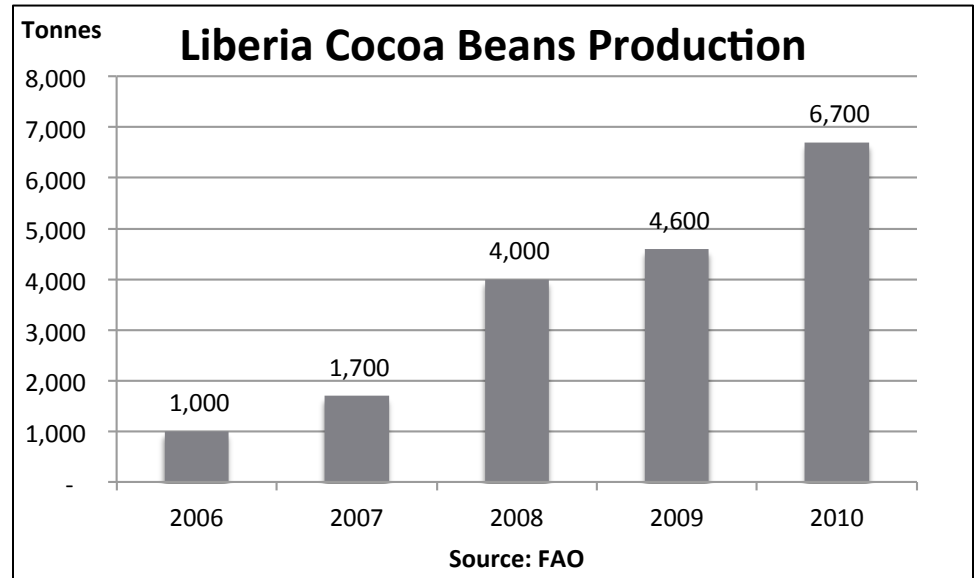


Derived from Nigerian Cost Data

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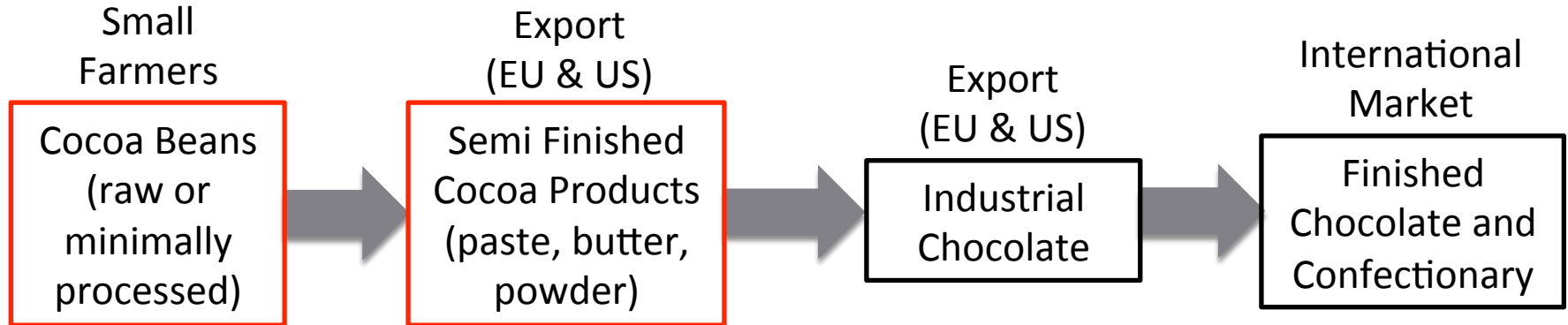
Cocoa: Size of Potential Market

- Fast growing industry: CAGR over past 5 years is 46.29%
- Second largest agricultural output after rubber
- Govt. making concerted effort to rebuild and grow sector post-conflict



- Prior to 1990, annual production in excess of 8000MT
- West Africa has 75% of global production, Europe and US have 70% of global consumption though growing consumption in Asia and Latin America
- FAO: Greater than \$20million Liberian annual export market by 2015

Cocoa: Supply Chain



- Current practice: Raw or minimally processed cocoa sent via Monrovia to commercial warehouses (typically in Europe) for processing
- Major players: Mondelez/ Cadbury, Nestle, Mars, Lindt. Warehouses aggregate cocoa from West Africa
- Some amount of processing (box 2) could be shifted at a lower cost to an SEZ in Liberia

Cocoa- SEZ and Supply Chain

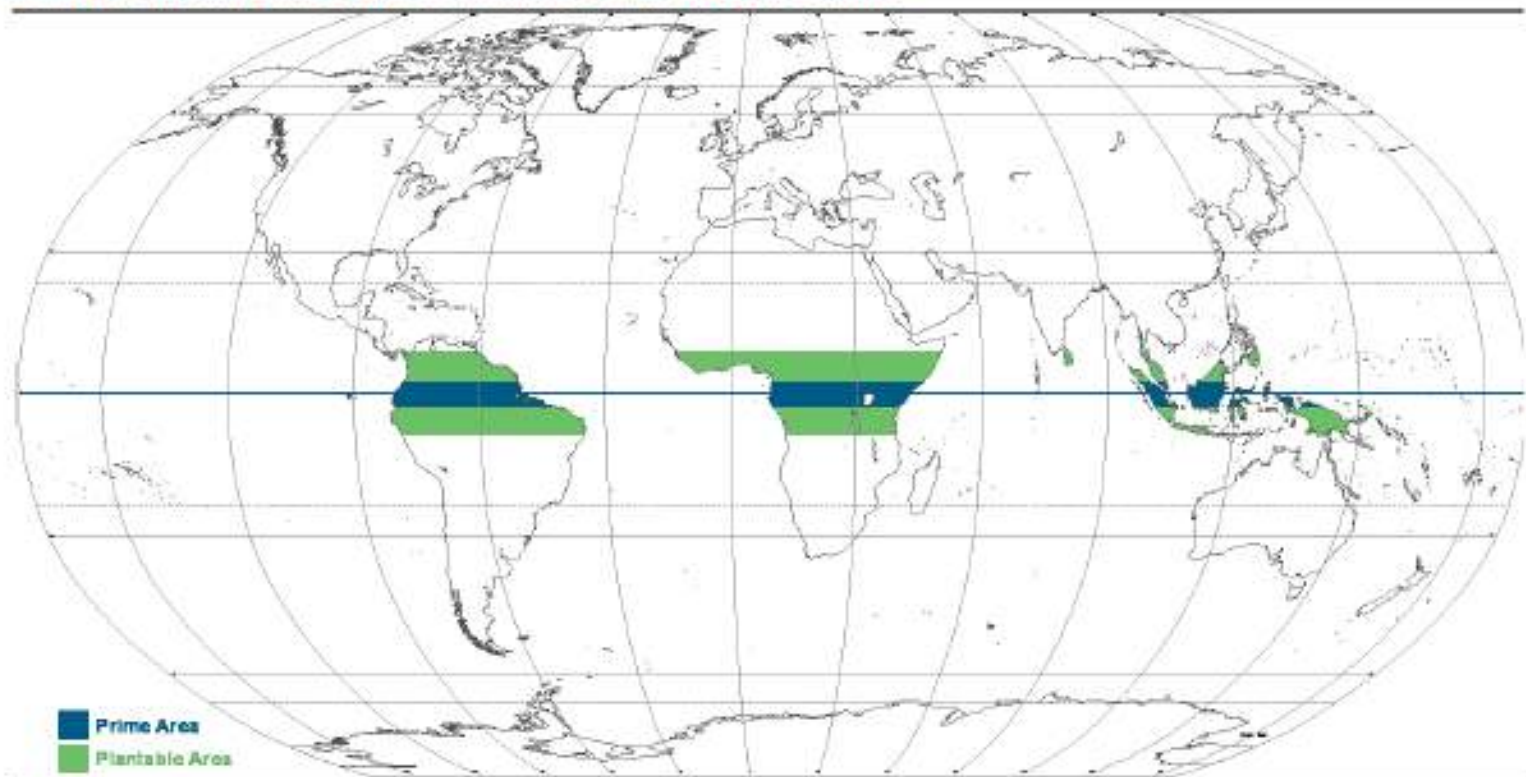
- SEZ
 - ▣ Scale economies in sourcing, assembly and handling and other post-harvest processing (currently buyers report that small farm size is an issue)
 - ▣ Lower capital costs (transportation, storage and other infrastructure)
 - ▣ Quality control and consistent grading; possible benchmarking
 - ▣ Better price signaling to farmers
 - ▣ Training to farmers
- Upstream: fertilizer and chemicals, other inputs
- Downstream: Capacity building, warehousing, paper and packaging

Cocoa- SEZ and Supply Chain

- Ghana:
 - Highly regulated market: Central purchasing authority (CocoBod) provides quality control to purchasers; CocoBod also sets prices
 - Excessive taxation appears to be discouraging international investment in Ghana Cocoa (based on World Bank report)
 - Ghana appears to be facing declining yields- lack of new forest land to develop and unsustainable farming practices
- Liberia:
 - Currently a more liberalized market- opportunity to develop a cluster
 - NGOs working with farmers to improve quality of processing and handling techniques- Eg: Mercy Corps.
 - Underutilized agricultural land- opportunity for more high-yielding varieties of cocoa

Palm Oil

Chart 15: Oil palms thrive in tropical climates within 10° of the equator



Sources: FAO, Standard Chartered Research

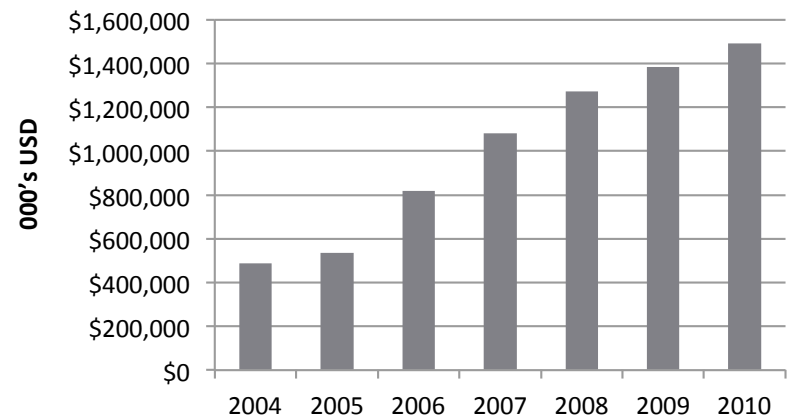
Liberia has a geographical advantage that supports Palm Oil cultivation with a limited set of global competitors

Palm Oil

- Current Cultivation Area in Liberia
 - ▣ ~27,000 Ha under cultivation
 - ▣ ~50,000 Ha allocated for exploitation
- Current Output
 - ▣ 183,000 tons fresh fruit bunches (FFB)
 - ▣ 44,000 tons crude palm oil (CPO)
 - ▣ Total: USD 30M
- Projected Future Land Under Cultivation
 - ▣ Liberia palm oil land concessions: 440,000 Ha
- Potential Future Output
 - ▣ 1.695MM MT of Crude Palm Oil
 - ▣ **\$1.65 Billion USDs sector opportunity**

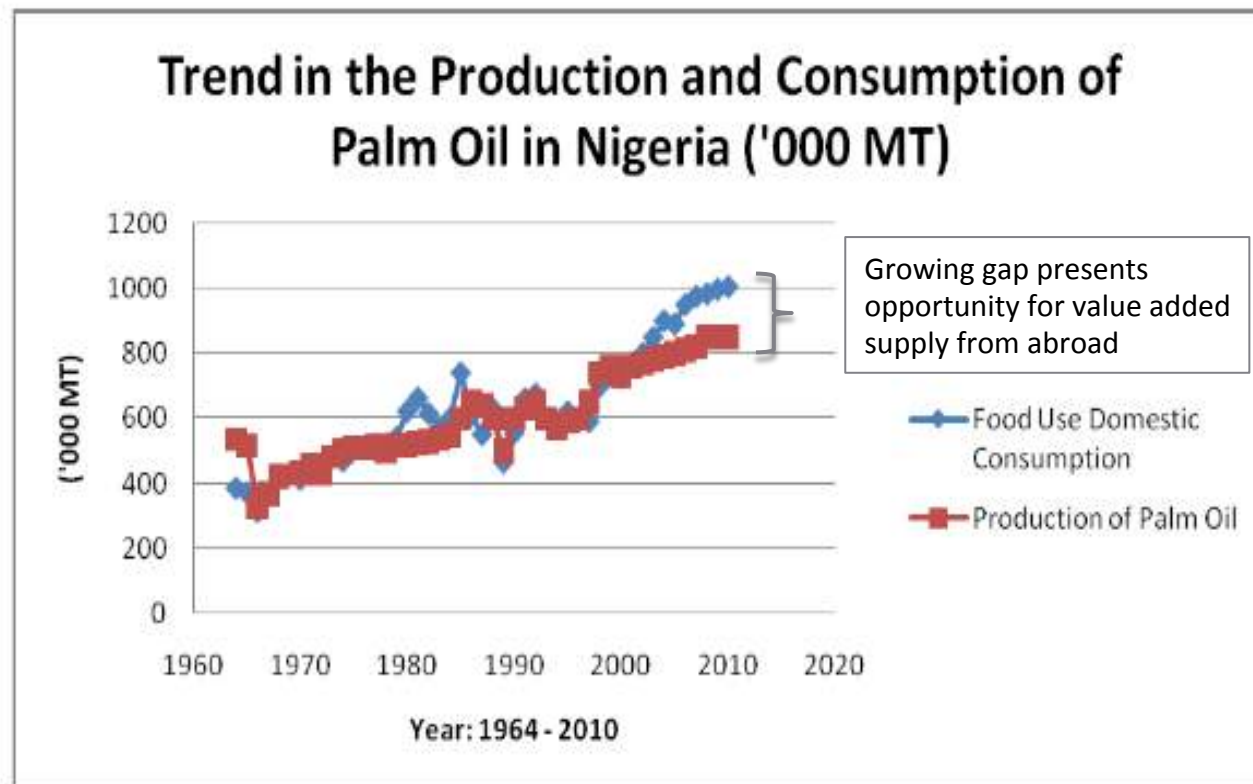
ECOWAS market estimate: 450,000 MT
Unmet demand in ECOWAS ~360,000 MT

Growth of West African Palm Oil Imports



Palm Oil

Figure 3: Trend in production and consumption of palm oil in Nigeria

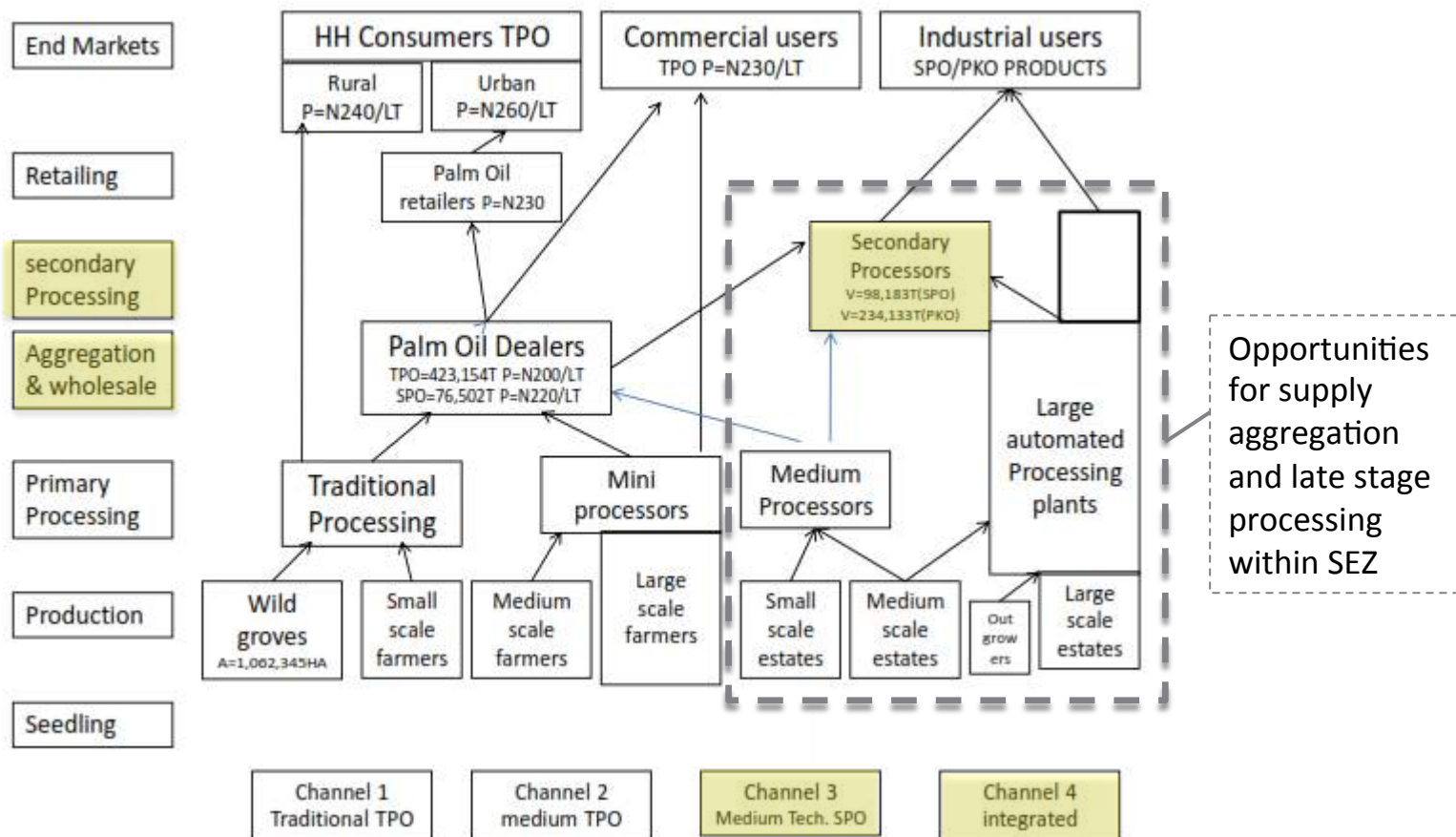


Source: United States Department of Agriculture

Palm Oil – Lessons from Nigeria

- Uncompetitive industry structure in Nigeria provides opportunity for value added production in SEZs abroad (Liberia)
 - ▣ 80% smallholder cultivation and wild-grove
 - ▣ Shielded by protectionist policies
- Three main Palm outputs have traction in Nigeria
 - ▣ Low quality TPO palm oil
 - Traditional use for direct sale as unprocessed oil.
 - ▣ High quality Special Palm Oil (SPO)
 - Processed food industry, produced by large mills
 - ▣ Palm Kernel Oil
 - Growing in demand for industrial market

Palm Oil Value Added Industry Diagram



(Liberia SEZ Opportunity Areas Highlighted)

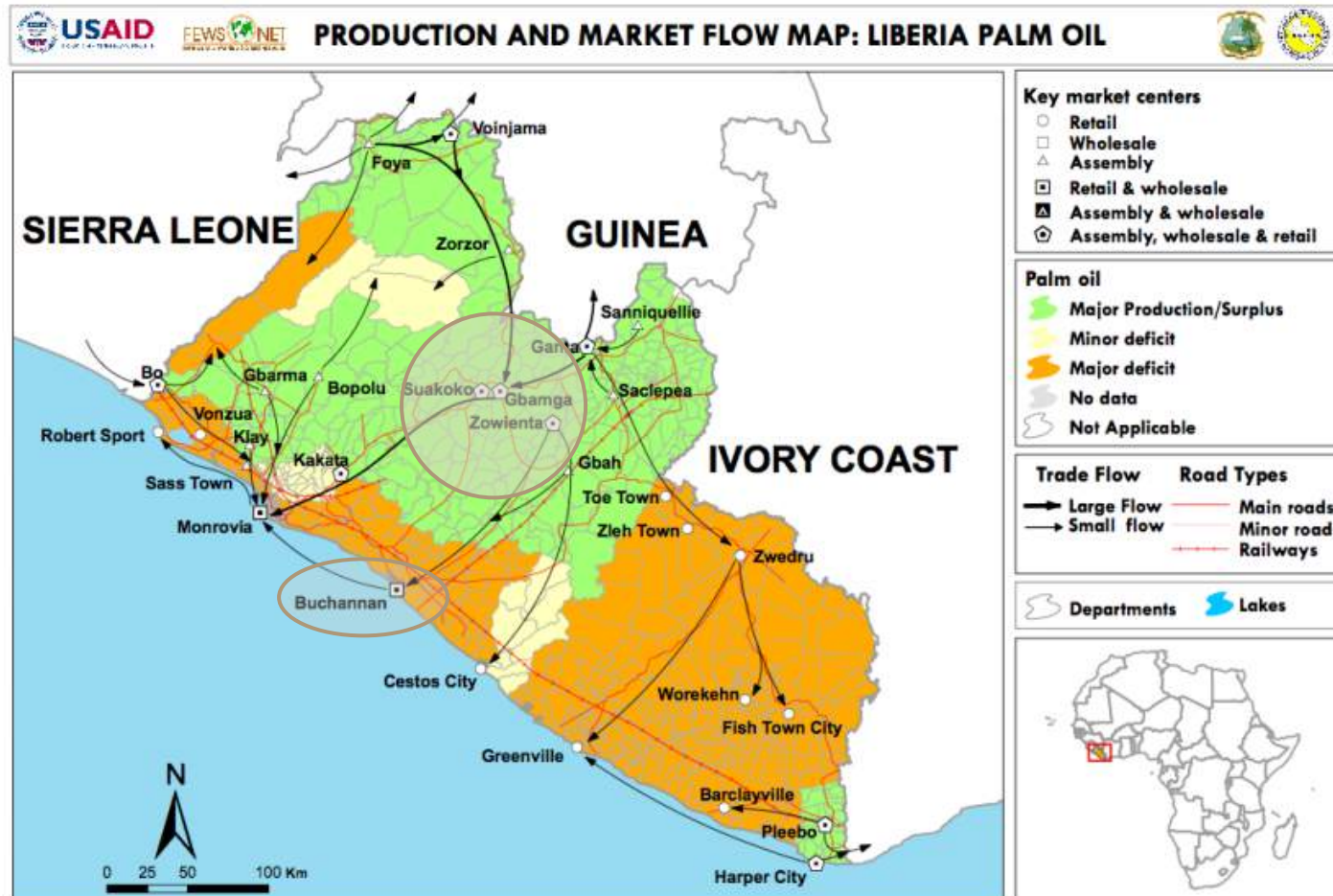
Palm Oil – SEZ Opportunities

- ❑ Centralized distribution and supply aggregation into larger volumes to support SPO production
 - ▣ Leverage Buchanan rail lines and connection to Palm Oil assembly region in central Liberia
- ❑ Higher grade SPO processing
 - ▣ Meet demand of West African production
 - ▣ Fill void in Nigerian production
- ❑ Seed distribution / R&D
- ❑ Crude Palm Oil (CPO) refining to SPO standards
- ❑ Potential future higher value added outputs

Major SPO / industrial palm buyers unable to source local product in Nigerian Market

- May&Baker (manufacturers of Mimi noodles),
- De-United Industries (manufacturers of market leading Indomie noodles),
- Honeywell foods (manufacturers of O-noodles),
- Chikki Foods (manufacturers of Chilkki noodles),
- UAC Foods (general food products and users of palm olein and palm stearin)
- Sumal Foods (special oil blends)
- Nasco Foods (buyers of palm stearin)
- Unilever (general users of palm stearin)
- Consolidated Foods (general users of palm stearin)
- Okin Biscuit (users of palm stearin as ingredient for biscuit making)
- Standard Biscuit (users of palm stearin as ingredient for biscuit making)

Palm Oil – Supply Geography



Buchanan SEZ has rail connection (via improved Arcelor Mittal lines) to the central palm producing areas of the country with nascent wholesale, retail and assembly hubs

Palm Oil – Supply Geography



Buchanan SEZ will be proximate to large Golden Veroleum (Sinar Mas) concessions and could potentially aggregate supply via Greenville along the coast

Conclusions

- ❑ Iron Ore Mining
 - ▣ Few downstream opportunities
 - ▣ Potential catalyst for SEZ infrastructure
- ❑ Agriculture
 - ▣ SEZ benefits for assembly, processing
- ❑ Cocoa
 - ▣ Semi-finished products, slow expansion up value chain
- ❑ Palm Oil
 - ▣ Regional Special Palm Oil opportunity

Thank You

Appendix

Agriculture Costs

COST ITEMS		FARM PRODUCT	ASSEMBLY	PROCESS ING	LOGISTI CS
FAM					
Hired Labour	3	48	29	1	0
Seed, Fertilizer & Chemicals	2	32	0	0	0
Marketing	1	10	0	0	0
Spraying & Machine Operation	3	5	0	0	0
Vehicle Hire	2	0	14	0	0
Vehicle Operation & Maintenance	2	0	4	9	0
Fees & Crop Levies	3	0	17	0	0
Packaging & Consumables	1	0	36	8	0
Loading, Storage & Plant R&M	1	0	0	64	15
Overhead, Licence, Fees & Management	2	0	0	10	3
Energy & Machine Operation	1	0	0	3	0
Transport to Delivery Point	3	0	0	0	82
Depreciation	2	5	0	6	0
TOTAL		100	100	100	100
High benefit from SEZ	1	10	36	75	15
Moderate Benefit from SEZ	2	38	18	24	3
Low benefit from SEZ	3	53	46	1	82

Rubber – Potential Products

□ Down market opportunities beyond tires

■ Industrial goods

- Hoses
- Conveyor belts
- Gaskets
- Seals
- Load bearing devices
- Shock/vibration absorption

■ Consumer goods

- Latex gloves
- Catheters
- Prophylactics
- Adhesives

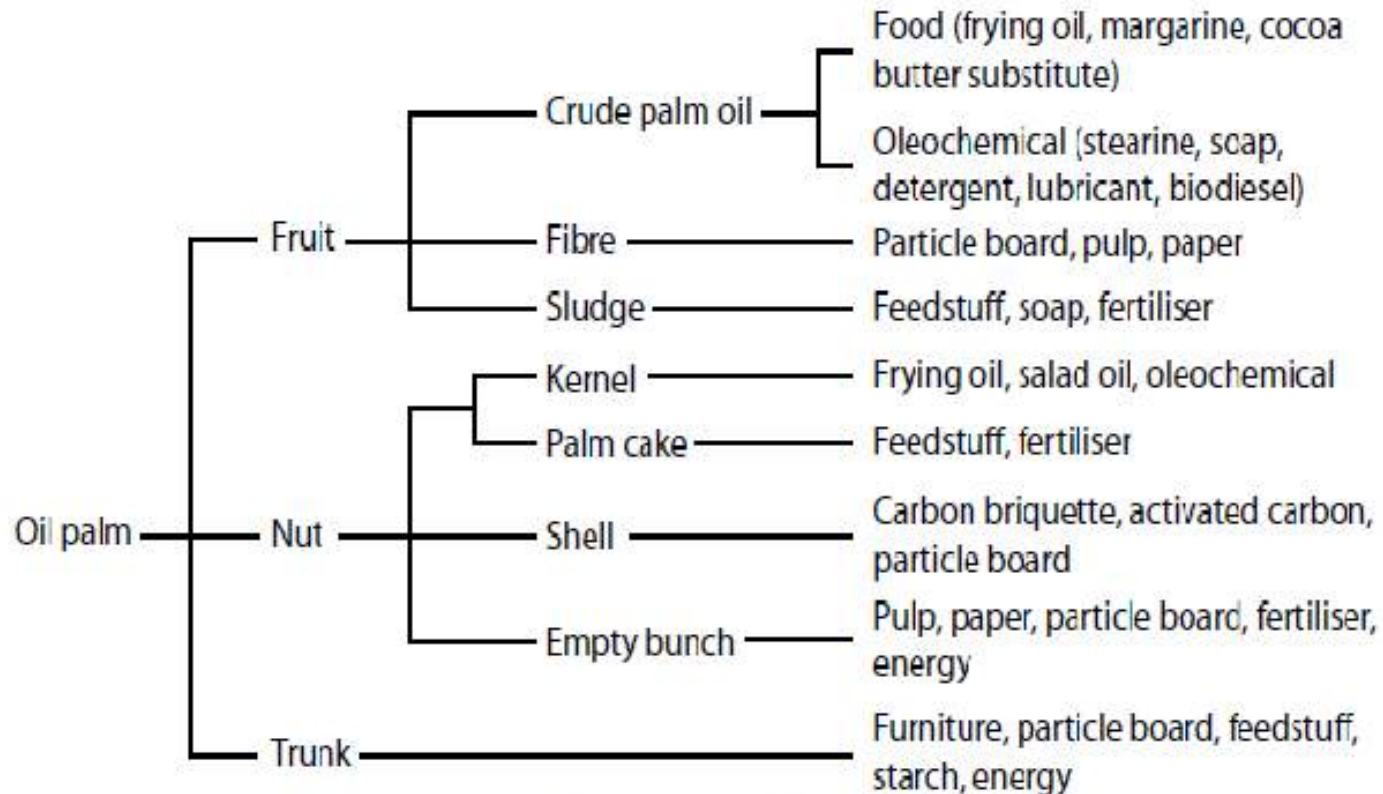
□ Rubberwood opportunities

- | | | |
|----------------------|------------------------------|-------------------------------|
| ■ High-end furniture | ■ Wood panels | ■ Veneer/plywood |
| ■ Parquet flooring | ■ Pulp and paper | ■ Picture frames |
| ■ Staircases | ■ Knife & chopping blocks | ■ Particle boards |
| ■ Windows and doors | ■ Moldings | ■ Fuel (charcoal, briquettes) |
| ■ Interior finishing | ■ Shoe heels | ■ Toys |
| ■ Tool handles | ■ Medium Density fiberboards | ■ Cabinets & drawers |
| ■ Crates and pallets | | |

Rubber – SEZ Benefits

- Organize cooperatives and public/private partnerships
 - ▣ Centralized preservation and treatment facilities
 - ▣ Capacity building: training, market intelligence and technology transfer
 - ▣ Manufacturing incentives
- Increase domestic and foreign demand
 - ▣ Research
 - ▣ Marketing

Palm Oil –Potential Products



Source: Abia State Palm Oil Value Chain Development Project Abia State, Nigeria, 2010