STORYBOARD

Global Market Expansion Strategy: Data-Driven Decision Framework

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Executive Summary

Terra Cotta Foods (TCF) is executing an expansion into Latin America and Asia to diversify suppliers, secure supply chains, and mitigate geopolitical risks. This analysis validates Marco's strategic vision with quantitative precision: Asia represents 75-80% of available purchasing power, while Latin America provides the essential 20-25% diversification hedge.

Four hierarchical visualizations systematically answer Marco's critical questions:

1. **Which regions show highest GDP (purchasing capacity) to justify distribution center investment?**
2. **How does Population (labor force/consumer base) correlate with economic potential for sourcing and manufacturing?**

The Big Idea

Asia dominates 75% of target market purchasing power with China/India as Tier 1 strategic hubs, validating proportional investment in the Viable Route while Latin America (25%) provides essential geopolitical diversification.

Do the Data Validate Marco's Plan?

Answer: YES - The data REINFORCE Marco's dual-region expansion strategy with quantitative precision.

What the Data Validate:

- Asia-Pacific IS viable for expansion - confirmed with 75% of total purchasing power (Total GDP)
- Latin America IS viable - confirmed as balanced growth market with 25% of purchasing power
- Geographic diversification IS necessary - clustering analysis identifies stable 5-year patterns (2020-2024)

Critical Adjustments Required:

- **Investment Proportion:** NOT 50-50 split, but 75% Asia / 25% LatAm (proportional to purchasing power)
- **Country Selection:** NOT "all Asia", but specific countries: China/India (Tier 1), Vietnam/Bangladesh/Indonesia/Mexico/Brazil (Tier 2)
- **Sequential Execution:** Viable Route FIRST (70% investment), Alternative Route SECOND (30% investment)
- **Budget Reallocation:** Sales budget insufficient at 12.5% - must increase to 18% for dual-region operations

Narrative Flow: Strategic Visualization Sequence

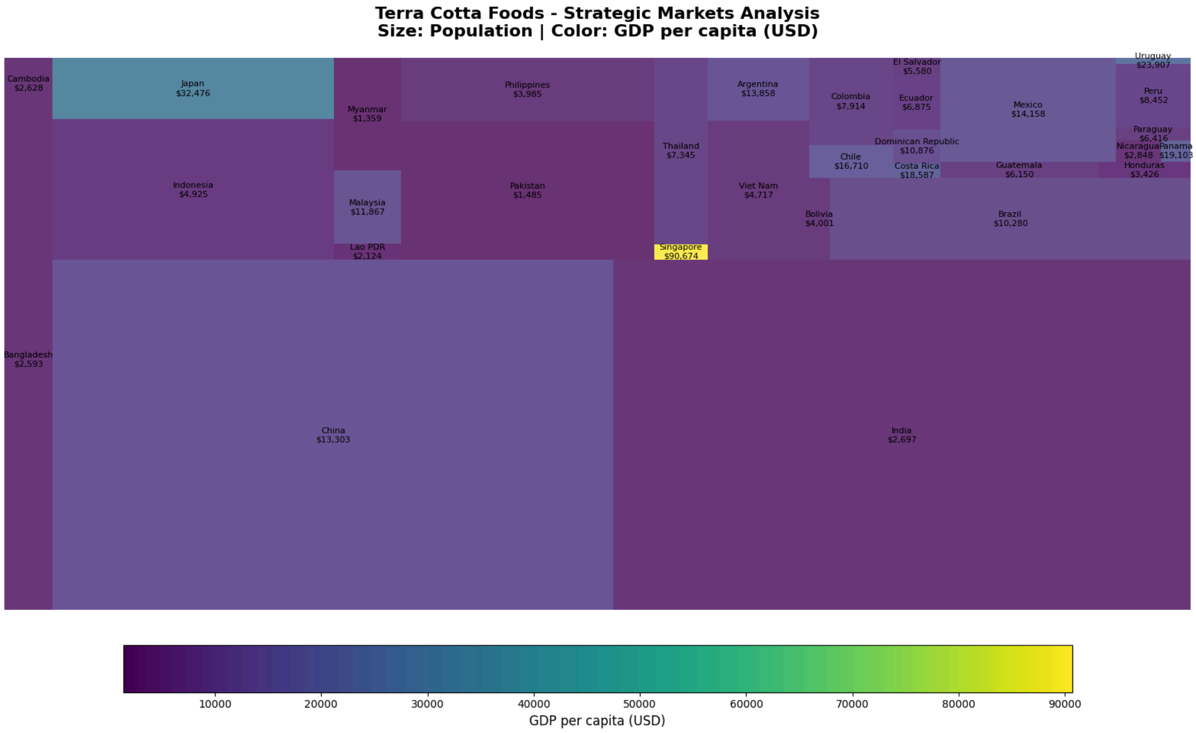
1. Hierarchical Treemap: Market Opportunity Quantification

Business Question: Where is the highest concentration of purchasing capacity (GDP × Population)?

What it Shows: Hierarchical view of Asia and Latin America segmented by GDP per capita income tiers. Rectangle size = population (consumer base), color intensity = GDP per capita (purchasing power).

Key Insight: Asia dominates with China (1.4B), India (1.4B), Indonesia (280M). Latin America concentrated in Brazil (217M) and Mexico (128M). Total GDP analysis reveals 75-25 proportion.

Decision Point: Allocate 75% of capital to Asia-Pacific for high-volume operations, 25% to Latin America for geopolitical hedge and balanced market entry.



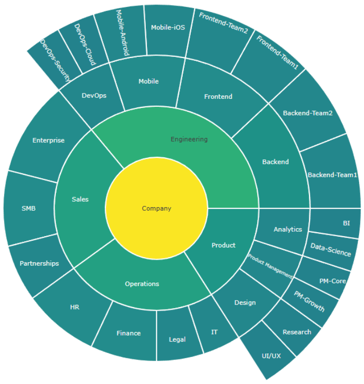
2. Sunburst Diagram: Internal-External Alignment

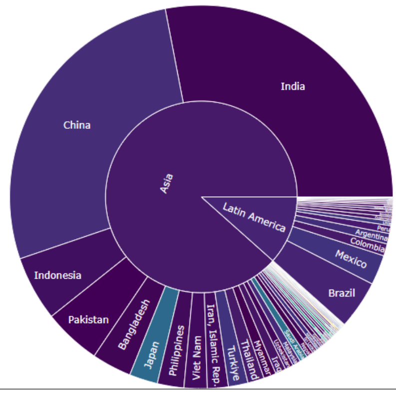
Business Question: How do TCF's internal capabilities align with external market structures?

What it Shows: Dual perspective: (1) TCF organizational structure by department share, (2) Regional market hierarchy by Continent → Income Group → Country.

Key Insight: Engineering represents 50% of internal capacity - must deploy toward products for Asia's Upper-Middle Income cluster and Latin America's emerging markets.

Decision Point: Align Product Development roadmap with target income levels: cost-optimized solutions for Asia's volume markets, premium products for Latin America's growth segment.





3. Dendrogram: Strategic Route Validation (2020-2024 Consistency)

Business Question: Which countries demonstrate 5-year stability in risk-opportunity profiles for viable supply chain routes?

What it Shows: Hierarchical clustering analysis (2020-2024) identifying countries with consistent positioning. Reveals two validated strategic routes with maximum stability.

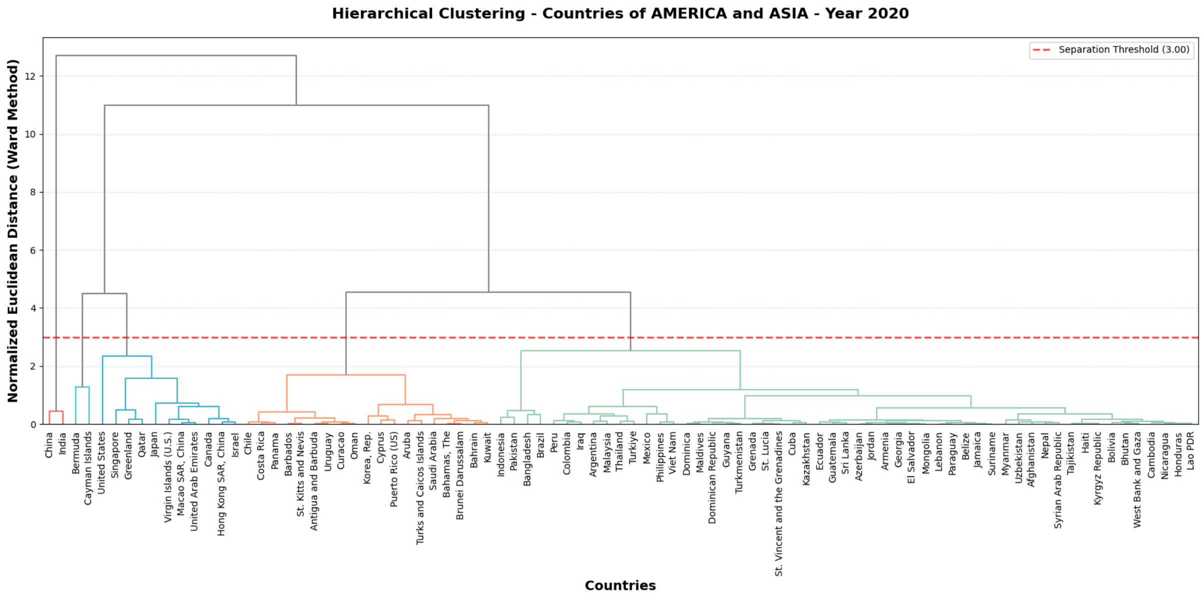
Key Insight: Viable Route achieves 5-year consistency: Cluster 5 (Vietnam, Bangladesh, Mexico, Indonesia, Brazil) for manufacturing + Cluster 4 (Japan, South Korea, Chile, Panama) for distribution. Alternative Route provides diversification: Colombia/Peru/Turkey for supply backup + US/Singapore for premium markets.

Decision Point: Primary investment (70%) in Viable Route for manufacturing and distribution. Secondary investment (30%) in Alternative Route for geopolitical risk mitigation and premium market capture.

Strategic Routes Breakdown:

Route Type	Countries	Strategic Rationale
Viable Route - Supply	Vietnam, Bangladesh, Mexico, Indonesia, Brazil	5-year consistency in low cost/high scale. Lowest operating cost volatility + largest labor force.
Viable Route - Distribution	Japan, South Korea, Chile, Panama	High value and volume consistency. Mature markets for Regional Distribution Centers.
Alternative Route - Supply	Colombia, Peru, Turkey	Geopolitical risk diversification. Backup to Asian dependence + shorter supply chains to Americas.
Alternative Route - Premium	United States, Singapore	Maximum margin capture. Singapore as ultra-premium hub for

Route Type	Countries	Strategic Rationale
		Southeast Asia, US as largest single market.



4. Multi-View Analysis: Budget Validation + Market Momentum

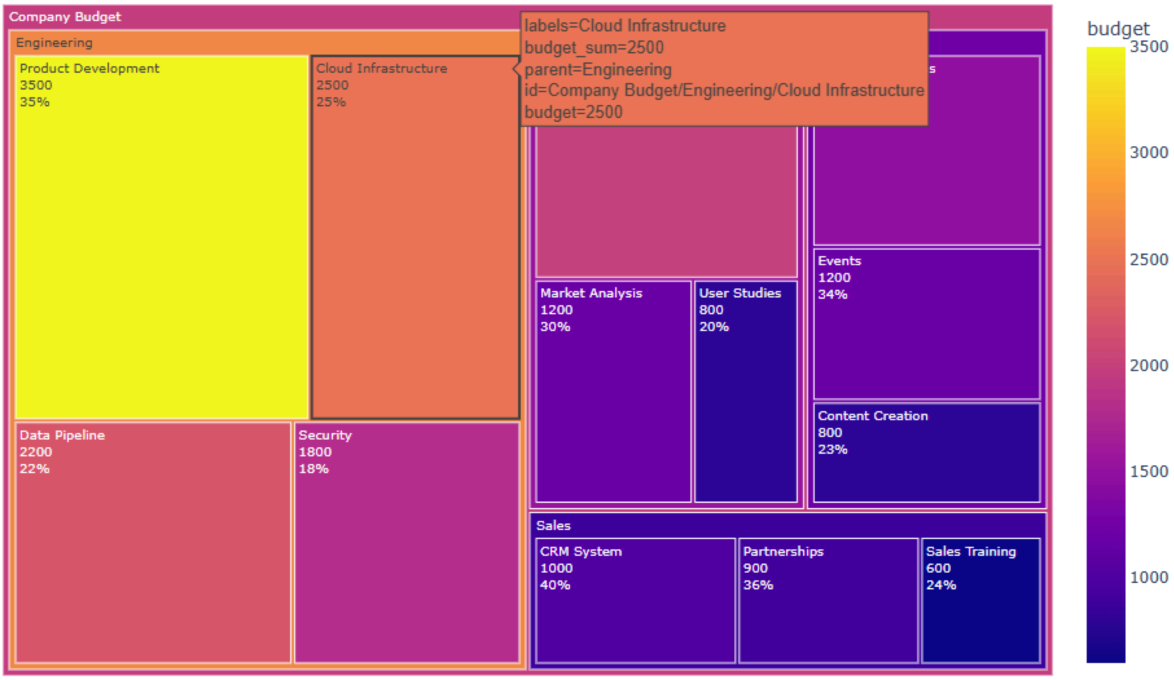
Business Question: How should TCF allocate $20M budget proportionally to market opportunities, and what is the optimal timing for entry?

What it Shows: Four complementary visualizations: (1) Current budget distribution by department/project, (2) Geographic market hierarchy by Total GDP (Purchasing Power), (3) Animated market viability map Asia 2020-2024, (4) Animated market viability map LatAm 2020-2024.

Key Insights:

- **Budget:** Product Development ($3.5M, 17.5% of total) is largest single investment - validates product-led strategy
- **Geographic Hierarchy:** Asia consumes 75-80% of treemap area (China ~55%, India ~12%), validating proportional capital allocation
- **Momentum Analysis:** Animated maps 2020-2024 identify "brightening bubbles" (rising GDP per capita) in Vietnam and Bangladesh - optimal entry windows
- **Trade-off Matrix:** Large Dim Bubbles (India) = volume strategy; Medium Bright Bubbles (Singapore) = premium strategy; Brightening Bubbles (Vietnam) = early entry advantage

Decision Point: Maintain Engineering 50% ($10M) but reallocate Marketing -2.5% to Sales, increasing Sales from 12.5% to 18% ($3.5M) to support dual-region operations. Time market entries to momentum: Vietnam/Bangladesh immediate, India/Indonesia 12-18 months.



Key Insights & Strategic Recommendations

Proportional Capital Allocation (Based on Total GDP Analysis)

Tier 1 Strategic Hubs (50% budget = $10M):

- China OR India (whichever has largest Total GDP in 2024 Treemap)
- Justification: Largest treemap block = highest concentrated purchasing power

Tier 2 Regional Hubs (30% budget = $6M):

- **Asia Momentum Markets:** Vietnam, Bangladesh, Indonesia (brightening in 2020-2024 animation)
- **LatAm Core:** Brazil, Mexico (largest blocks in LatAm treemap)

Tier 3 Diversification & Premium (20% budget = $4M):

- **Premium Markets:** Singapore, UAE (bright bubbles, high GDP per capita)
- **Backup Supply:** Colombia, Peru, Turkey (Alternative Route from dendrogram)

Market Segmentation: Trade-off Matrix

Market Type	Example	TCF Strategy	Budget %
Large Dim Bubbles	India, Indonesia	Volume focus, price control, mass distribution	35%
Large Bright Bubbles	China, Japan	Balanced - volume + premium products	40%

Market Type	Example	TCF Strategy	Budget %
Medium Bright Bubbles	Singapore, UAE	Premium products, high-margin sales	15%
Brightening Bubbles	Vietnam, Bangladesh	Early entry before saturation	10%

Required Budget Reallocation

Current $20M budget requires adjustment for dual-region operations:

- **Engineering:** MAINTAIN at 50% ($10M) - aligned with Asia volume requirement
- **Research:** MAINTAIN at 20% ($4M) - needed for momentum market adaptations
- **Marketing:** REDUCE from 17.5% to 15% ($3M) - efficiency gains expected
- **Sales:** INCREASE from 12.5% to 18% ($3.5M) - CRITICAL for dual-region operations

Implementation Roadmap

Q1 2026 - Foundation Phase:

- Finalize Tier 1 Strategic Hub: Due diligence China vs India (select based on 2024 Total GDP treemap data)
- Initiate manufacturing partnerships: Vietnam, Bangladesh (brightening momentum markets)
- Reallocate budget: Marketing 17.5% → 15%, Sales 12.5% → 18%

Q2 2026 - Viable Route Deployment:

- Establish manufacturing: Mexico, Indonesia, Brazil (Cluster 5 from dendrogram)
- Launch distribution centers: Japan, South Korea (Asia HUBs); Chile, Panama (LatAm HUBs)

Q3 2026 - Alternative Route Initiation:

- Explore diversification supply: Colombia, Peru, Turkey
- Pilot premium markets: Singapore (Southeast Asia ultra-premium HUB)

Q4 2026 - Optimization Phase:

- Evaluate US market entry (Alternative Route premium segment)
- Validate hypothesis: Can one Southeast Asia hub cover Vietnam/Philippines/Thailand efficiently?

Year 2-3 - Scale & Integration:

- Full Viable Route scaling based on Q1-Q4 2026 learnings
- Alternative Route expansion contingent on geopolitical risk assessment

This data-driven framework validates TCF's expansion vision with quantitative precision. The 75-25 Asia-LatAm allocation, Strategic Route validation, and budget reallocation provide Marco with actionable intelligence to execute with confidence.