



THE AGRICULTURAL MARKETPLACE IN THE 21ST CENTURY

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EIGHT CRITICAL DIMENSIONS/CHARACTERISTICS

- ✓ **The Capital Market Challenges**
- ✓ **The Resurgence of Risk**
- ✓ **Growth/Consolidation/Structural Change**
- ✓ **The Sustainability Imperative**
- ✓ **Resource Availability/Productivity**
- ✓ **Innovation and Technology**
- ✓ **The Role of the Public Sector**
- ✓ **The Bioeconomy**



THE CAPITAL MARKET CHALLENGES

- ✓ **Higher Capital Costs**
 - Moderate asset ownership
 - Slower growth
 - Less leverage
 - Asset values?
- ✓ **Commodity/Financial Market Linkages**



THE CAPITAL MARKET CHALLENGES

- ✓ **Globalization of Funds Flows**
 - FDI
 - Resource/land ownership
 - Financial institution competition
 - Integration of financial markets
 - Some not market driven (China)
- ✓ **The Capital Markets Drive**
 - Location of business activity
 - Structural change
 - Business model
 - Risk/reward sharing



THE RESURGENCY OF RISK

- ✓ Increased operating risk and margin volatility
- ✓ Typical operating risk management instruments/strategies less effective
- ✓ Financial management strategies more crucial
 - Fixing interest rates
 - Increase working capital
 - Extending terms
 - Reduce debt



THE RESURGENCY OF RISK

- ✓ Strategic risks more important
- ✓ Potential Black Seven events – the tails count
- ✓ Risk intelligence and supply chain partners critical

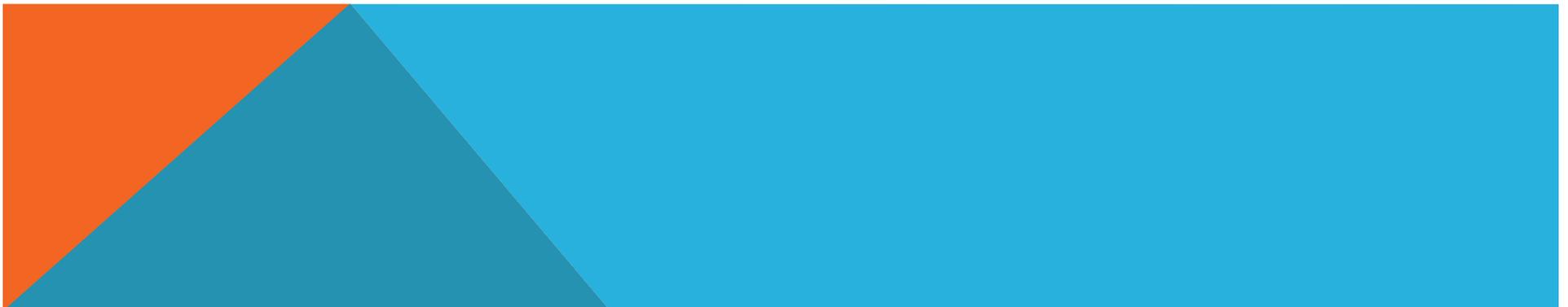


GROWTH/CONSOLIDATION/STRUCTURAL CHANGE

- ✓ Economies of size and learning
- ✓ Reinvested earnings
- ✓ Market access – inputs and products
- ✓ Supply/value chain linkages/alliances
- ✓ Risk sharing business models (contracts, leasing, etc.)

Biological manufacturing of

→ SARM's (specific attribute raw materials) ←



THE SUSTAINABILITY IMPERATIVE

✓ The capacity challenge

- Population growth
- Land availability
- Water quantity/quality/distribution
- Plant nutrient availability
- Economic growth
- Nutrition/malnutrition



THE SUSTAINABILITY IMPERATIVE

- ✓ **Performance criteria/metrics**
 - Economic and social
 - Environmental
 - Health and safety
- ✓ **Creating value**
 - Freedom to operate
 - Cost reductions
 - Revenue increases
 - Reputation
 - Productivity enhancement
 - Risk reduction
- ✓ **Sustainability vs. productivity**



RESOURCE AVAILABILITY/PRODUCTIVITY

✓ Land/Water/Open Space Resources

- Availability and use
- Degradation
- Siting and location
- Prices
- Ownership/property rights
- Energy availability/cost



RESOURCE AVAILABILITY/PRODUCTIVITY

- ✓ Wild lands
- ✓ Recreational uses
- ✓ Land use planning/urbanization
- ✓ Rural/urban water rights
- ✓ Odor
- ✓ Water quality



INNOVATION AND TECHNOLOGY

- ✓ Simplify/automate
- ✓ Product vs. process innovation
- ✓ Sustaining vs. disruptive innovation
- ✓ Private vs. public sector investment
- ✓ Technology/productivity is critical



INNOVATION AND TECHNOLOGY

- ✓ Biotech/nutrition – triple stack
- ✓ Information – PDAs, automatic capture
- ✓ Process control – GPS guidance



THE ROLE OF THE PUBLIC SECTOR

- ✓ **Socialization of risk**
- ✓ **Financial markets/regulation**
- ✓ **Policies impacting agriculture**
 - Energy-biofuels
 - Immigration
 - Environmental
 - Food safety
 - Transportation – rail/water/highway
 - Trade
 - Antitrust – hearings on AG
 - Farm Bill – ACRE, conservation and crop insurance
- ✓ **Regulation/Intervention/Participation**



THE BIOECONOMY

✓ **Multifunctionality – AG will be raw material supplier for**

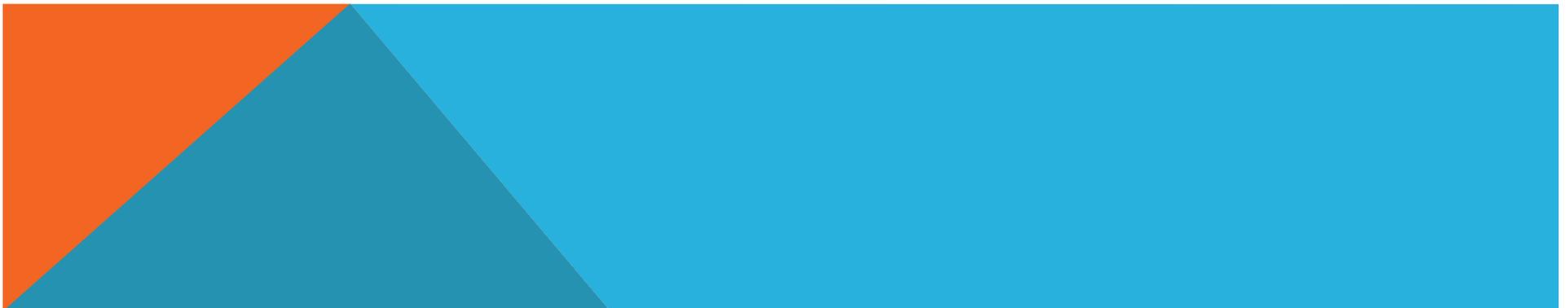
- Nutrition
- Fiber
- Energy
- Industrial products/polymers
- Health/pharma



Balance/trade-offs critical



✓ **Credence attributes (animal welfare, local, family farm, organic, etc.) more common**



THE BIOECONOMY

- ✓ Population/income growth will create opportunity
- ✓ Food and health/obesity linkages will be more important
- ✓ Food safety/traceability will drive business models/strategy
- ✓ Global hunger/malnutrition – how do we respond?



THE NEW ECONOMY

✓ Globalization (The World Is Flat)

- Products
- Resources
- Finance

✓ Financialization

- Commodity/real and financial markets more tightly linked
- Capital markets drive the real world
- But transparency/information is critical (The World is Curved)



THE NEW ECONOMY

✓ Consolidation/Integration

- Larger firms
- Along the value/supply chain
- Industry convergence (the Bioeconomy)

