

Food Innovation Strategy

Translating Ingredient Science Into Value-Added Products

Designing Consumer-Preferred Solutions through Molecular Excellence

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The Journey of Ingredients

EVOLUTION

From hunters and gatherers to precision molecular design.

Evolution of Food Ingredients



Hunters & Gatherers

●
Natural, regional, and seasonal sustenance.



Agri-Revolution

●
18th Century transition to structured farming and scale.



Industrialization

●
Enabling uniformity and global industrial scale.



Modern Science

●
Scientifically designed for health and high appeal.

Journey from “Survival” to
“Strategy”



THE FUNDAMENTAL SHIFT



Focus on Value Addition

Beyond Basic Sustenance

The role of food ingredients has shifted from providing calories to providing solutions. In the modern market, innovation is the only way to meet consumer expectations for health, taste, and sustainability.

Trash & Treasure Story

**YOUR PROTEIN
WAS ONCE
FACTORY WASTE**



**WHEY
PROTEIN
ISOLATE**

CHOCOLATE
ČOKOLÁTY ČERNOŤIANS

2.2 kg
NET WT 4.85 LB

8455006 KOMO PODOBNEJŠI SUPPLEMENT | LAKA-ČRISČIVÝ SACHARÓZ



Functional Domains of Ingredients



Structural Integrity

Ensuring texture and form. Example: Wheat gluten providing the elastic framework for bread dough.



Stability

Extension of shelf-life through scientific intervention and protection against spoilage.



Nutritional

Targeted health functionality and fortification for modern dietary requirements.

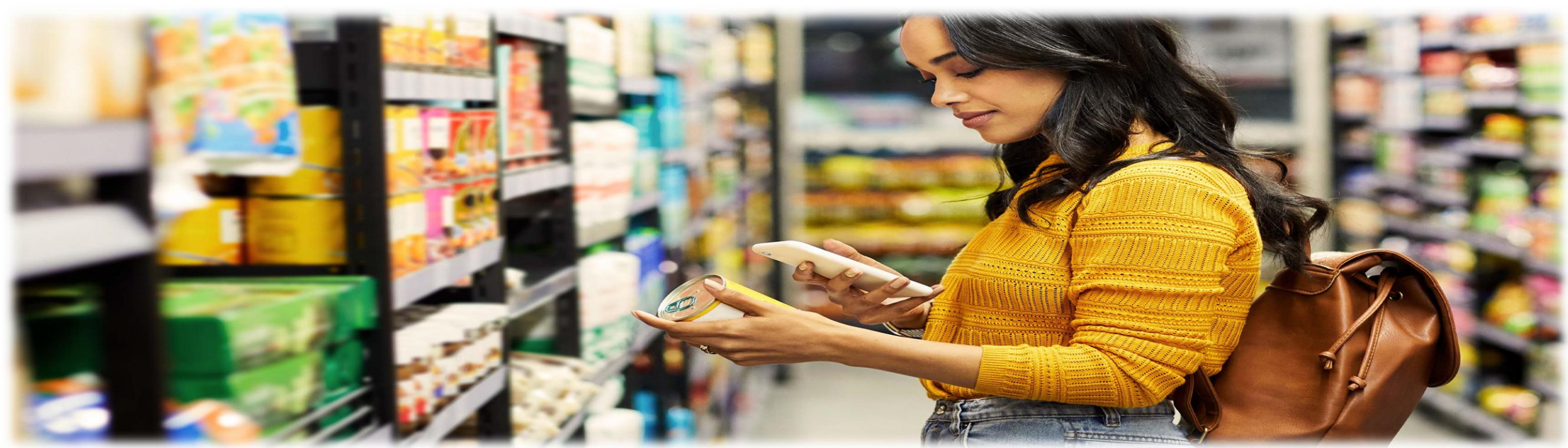


Sensory Profile

Spices like cumin or turmeric play a sensorial role, enhancing aroma and visual appeal.



To create “Value added product” is the art of balancing all four



Consumer Demand

Consumer preferences, expectations, and feedback shape every stage of the food value chain, from raw ingredients to final products.

CONSUMER IS KING!!

| Packaged Water

\$451 B

Global Market Value in 2025



BOTTLED WATER VS. TAP WATER
DIFFERENCES, PROS AND CONS

Bottled Water: Safety & Convenience Driver

Packaging water in bottles is a direct response to consumer demands for **safe hydration (SAFETY -THE NEED)** and **on-the-go portability (CONVENIENCE – THE EXPERIENCE)**

- ♻️ Rising trend toward premium glass packaging for sustainability.
- 💧 Consumers are looking for alkaline, mineral enhanced options, vitamin enriched water, flavoured water – give hydration + benefit

MULTI-GRAIN INNOVATION

The Apex of Value-Addition

Moving from refined flour to multi-grain bread represents a leap in ingredient science. We balance the **Sensory Profile** (aroma and crunch) with **Nutritional Fortification**.

This meets the modern consumer's demand for a "health-forward" product that doesn't compromise on the eating experience.



Innovation: Upcycled Fiber-Plus Snacks

This innovation bridges the gap between waste reduction and nutritional excellence. We convert agricultural "side-streams"—like brewery spent grains—through advanced milling and fermentation into high-value prebiotic ingredients.

Value Addition

Smart snacks enriched with natural antioxidants and phenolic compounds, satisfying the "Eco-Ethical" consumer demand for healthy, on-the-go options.

Translating "The Science of Waste" into "The Business of Wellness."





Real World Challenges

Real-world innovation: Balancing what people want with what the supply chain allows.

Climate & Supply Chain Hurdles

Tropical Climate Hurdles

India's high temperature and humidity drastically reduce product stability. Ingredients must be processed specifically to survive these conditions.

Case Example:

Edible Oils & Fried Snacks: Tropical heat accelerates oxidative rancidity; using antioxidants (e.g., TBHQ, BHA) and high-smoke point fractionated oils helps maintain shelf freshness.

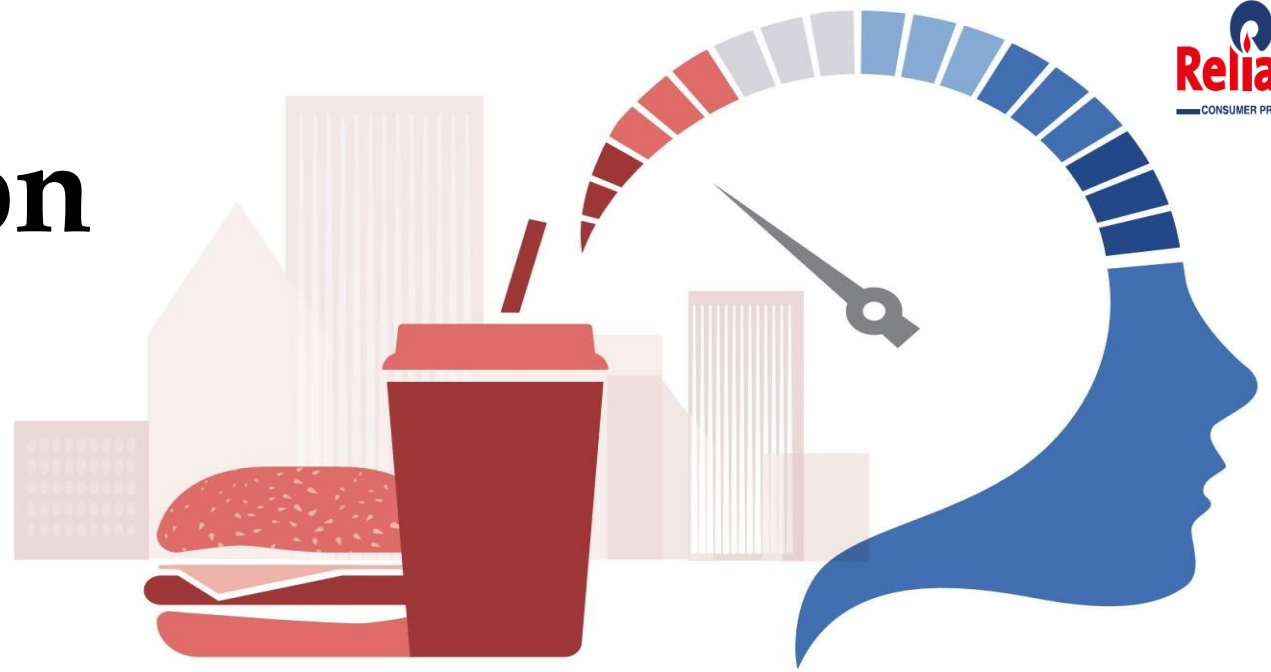
Natural cocoa butter (34°C): Tropical temperatures (often above 40°C) melt low-MP chocolate; switching to CBS/CBR keeps it solid.

Supply Chain Variability

Seasonal availability of agro-commodities makes scaling difficult. Yet consumer demand is year-round. Standardizing quality across inconsistent raw material batches remains a primary hurdle for manufacturers. This requires advanced logistics and early-stage processing.

Case Example: The Mango Industry relies on converting seasonal harvests into shelf-stable pulp. This ensures mango-flavored beverages and yogurts remain available even during winter months.

Public Perception for “Processing”



A growing negative perception links "processed" with "unhealthy." Industry must bridge the gap by explaining that processing includes essential safety steps like **pasteurization, polishing, retort** and **fortification** (e.g., adding Iodine to Salt).

Optical sorting in case of **peanuts** (with invisible molds) is a sophisticated safety shield, not just an industrial preference.

Plant based drinks: consumers want plant-based alternatives and expect them to have the creamy consistency of dairy

Processing is a SOLUTION

Taking an example: Rice Processing

Industrial Process	Objective	Consumer Benefit
Bran Removal (Freshness Science)	Stripping outer layer to reduce fat content	Prevents oxidative rancidity; longer freshness
Polishing (Sensory Experience)	Enhancing visual "pearl" finish	Improved palatability and premium texture
Stabilization (Climate Resilience)	Scientific intervention & protection (enzyme inactivation)	Extended shelf-life in diverse climates
Sorting & Grading (Global Standards)	Standardizing grain size and quality	Consistency that meets global export standards

Power of Digital Activism



Digital Activism

Social media allows rapid spread of misinformation. Watchdog groups and influencers often scrutinize ingredient labels without scientific context, forcing brands to adopt "**Clean Label**" strategies to build trust.

Example: viral hashtags regarding palm oil usage impacted the global supply chain of major FMCG brands.

Social media influencers challenged the "**Health Star Rating**" – impacted regulatory framework

Value seeking Consumers *at right price point*



Economic Barrier

Maintaining high safety and quality standards while keeping products affordable for the mass market is a constant and hardest tightrope walk.



Input Inflation

Rising costs of raw materials (Sugar, Palm Oil) clash with rigid consumer price expectations, leading to "Shrinkflation."



Value-First Packs

Demand for Rs. 5 and Rs. 10 "Value Packs" encourages manufacturers to optimize every cent of the ingredient cost.



Regulatory Evolution

"Innovation without a framework is just an experiment; with regulation, it becomes a reality."









Regulatory Framework – A Paradigm Shift



Regulatory Framework – A Paradigm Shift



Regulatory Landscape Opportunities

Product Category	Standardized Definition	Proprietary Complexity	
	New Ingredient Addition (ex. Spices, Tea, Cereal)	Carbonated Water, Caffeinated Beverage, Non-Carbonated Beverage	No allowance of safe ingredients – long history of consumption
	Coffee	Coffee Powder (format) permitted	Liquid formulations lack clear classification
	Sugar	White/Refined Sugar (Sucrose >99.5%)	No standard for Brown Sugar under FSS (FPS&FA)
	Dairy Drinks	Flavoured Milk (Strict Fat/SNF limits)	"Dairy Based Drinks" for lighter sensory texture
	Soy Sauce	Permitted if fermented	Non-fermented versions lack clear recognition
	Emulsified sauces	No Standard Category	Lack of clarification
	Cocoa based spread	Chocolate	No Standard Category
	Ready to Eat Savouries & Sweets	No definition for traditional categories	Lack of Clarification



Conclusion: Strategic Way Forward

"Charting the course for what's next."

Strategic Way Forward

Industry must leverage Associations to drive change in the regulatory ecosystem through a science-first approach.



1. Evidence Building

Generating a robust library of localized scientific data, risk assessments, and global benchmarks to defend and support new standards.



2. Expert Engagement

Deepening collaboration with academia and independent subject matter experts to provide unbiased scientific validation for initiatives.



3. Scientific Advocacy

Leading the narrative by submitting rigorous proposals, detailed consultation responses, and science-backed draft amendments.



4. Unified Voice

Presenting a cohesive, authoritative industry perspective to regulators to ensure clarity, consistency, and maximum policy impact.

A soft, pink watercolor splash with a textured, torn-edge appearance is centered on a white background. The splash contains small white speckles and a faint, circular pattern at the top. The words "Thank You" are written in a black, elegant cursive font across the center of the splash.

Thank
You