



The T & T Foresight Project

NIHERST

Sector Foresight
Project:

**FOOD &
BEVERAGE**

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CONTENTS

1	EXECUTIVE SUMMARY	3
1.1	Introduction	3
1.2	Definition of Food & Beverage	3
2	WHAT'S HAPPENING GLOBALLY?	3
2.1	The key global trends	3
2.2	What's Happening With Consumers?	4
2.3	Economics of the Sector	5
2.4	Views of Profitability	6
3	WHAT APPROACH ARE SECTOR PLAYERS TAKING?	7
3.1	The Big Players	7
3.2	New Zealand as a Small Country Example	8
4	SECTOR BUSINESS MODELS AND PLAYER POSITIONS	8
4.1	The Sector Approach	9
4.2	Science & Technology Research & Development Investment	10
5	HOW THE FOOD & BEVERAGE SECTOR IS EVOLVING	11
5.1	The Food & Beverage Sector Context	11
5.2	The Food Innovation Continuum	11
5.2.1	Key Sector Roadmap Influences	12
5.2.2	Sector Convergences	12
5.3	Key Food & Beverage Sub-Sectors	12
5.3.1	Overview	13
5.3.2	'Food For Fuel' F and B	14
5.3.3	Health & Wellness F & B	14
5.3.4	'Experiential' F & B	16
5.3.5	Niche Focus F & B	16
6	CONSUMER FORESIGHT	17
6.1	The Global Consumer Market	17
6.2	Key Consumer Groups	18
6.3	Key Consumer Trends to 2020	18
6.4	How Do These Relate to Future Sector Prospects?	19
6.4.1	Force Field Analysis	20
7	SECTOR FORESIGHT – SHAPING THE FOOD & BEVERAGE SECTOR OVER THE NEXT 10 – 20 YEARS	21
7.1	Sector PESTE	21
7.2	Sector SWOT	22
7.3	Global Scenarios	22
7.3.1	EU Health and Wellness Scenarios	22
7.3.2	Science & Technology Scenarios	24
7.3.3	NZ Food & Beverage Sector Future Scenarios (13)	28
8	FINAL COMMENT	29
9	APPENDIX 1: KEY REFERENCES	30
	APPENDIX 2: GLOBAL FORESIGHT OVERVIEW	31

1 EXECUTIVE SUMMARY

1.1 Introduction

This report is the NEXT contribution to Chapter 1 of a 5 Chapter sector project that has the aim of providing a briefing paper that enables policymakers, researchers, entrepreneurs and investors to understand the potential to commercialise and grow key areas of the food and beverage sector in Trinidad and Tobago.

Chapter 1 provides an overview of how the global food and beverage sector is evolving and what the key focuses might be some 10 – 20 years from now in order to provide a context for examining potential niche opportunities that TT might seek to pursue. Chapters 2 – 5 focus on the current and potential capabilities that T&T has, identifying specific niches in the future global economy that T&T could realistically aim towards based upon the capability base, and then developing the associated business cases necessary for commercialisation to ensue.

The increasing promotion of free trade in the Caribbean means that local manufacturers must become globally competitive; they can no longer rely on being secure in their local market. The industry around the world is marked by the two keys to success - either being the biggest and exploiting economies of scale and cost structures, or being unique and exploiting the added value of fashion, special qualities and brand.

1.2 Definition of Food & Beverage

For the purposes of this report we feel the following three quotations are very appropriate, given where the future of the sector appears to be heading:

***‘Let your food be your medicine, and your medicine be your food’ –
Hippocrates***

***‘Food is perhaps the greatest single human sensation pleasure’ – source
unknown***

***‘We live not in order to be able to eat but we eat in order to be able to live’ -
Socrates***

2 WHAT’S HAPPENING GLOBALLY?

2.1 The key global trends

The key trends shaping the future of the sector include the following:

- The global food and beverage sector is quite mature and total revenue is on a slow upward growth path – but there are strong growth niches.
- The Asia-Pacific region is growing rapidly, especially in India and China, and is a major driver of growth in the global food and beverage sector.
- Governments and the private sector are continuing to invest large amounts of R&D funding into research associated with food and beverage, in particular in the area of value adding and convergence.

- The primary focus of global S & T based research and development efforts is the link between health and nutrition, ICT applications and advances in material science.
- The industrial food and beverage sector is facing a changing paradigm which requires addressing changing consumer perspectives and developing new and innovative solutions.
- Changing demographics will have a very significant impact upon the future of the food and beverage sector – especially ageing populations. A move to life phase, gender, ethnic, and religious related food and beverage solutions will accompany this change.
- Research funding trends show a shift towards funding interdisciplinary research teams and research at the convergence of disciplines to drive discovery and innovation.
- Societal reactions and concerns are increasing in importance as an important barometer of the acceptability of emerging food and beverage products and services.
- The trend to big or unique – in all areas of the value chain. Big or unique manufacturers; big or unique distribution chains; big or unique retail outlets, big or unique products.
- The shift in consumer spending priorities from the traditional food retail sector to the experiential sector – and a strong interest in ethnic and fusion focuses.
- Value creating strategies are becoming totally dependent upon developing an in depth understanding consumers and their needs – and these will change markedly over the next 10 – 20 years due to demographic change.

2.2 *What's Happening With Consumers?*

Understanding the competitive nature of the global food industry means understanding changing consumer preferences and the food industry's efforts to meet these demands (1). The following are some of the major global shifts occurring:

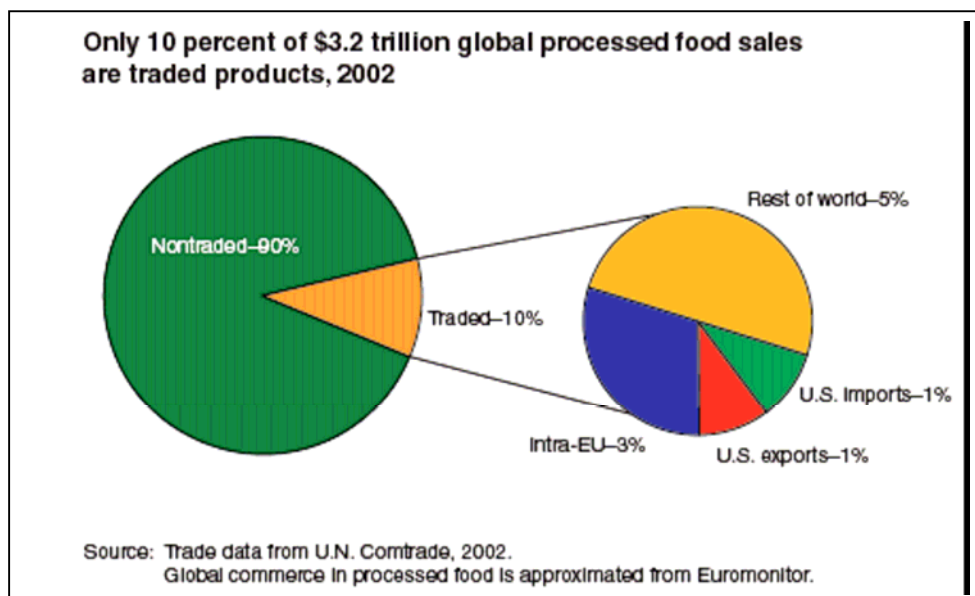
- The task of moving food from the farm to the table is becoming increasingly complex, involving diverse local, national, and global agents and networks.
- Food markets are constantly evolving, driven not only by changes in consumer preferences, but also by technology, linkages between members of the food supply chain, and prevailing policies and business environments.
- Sophisticated supply chains and distribution channels are now being adopted across different regions and national boundaries.
- The food industry will continue to evolve in response to specific consumer demands in individual markets, with significant differences between industry strategies in the developing and the developed countries.
- Across all countries, modern food markets are responding to consumer preferences at a local level, even as the food industry becomes more global.
- In mature developed-country markets, product differentiation, value added, and consumer trust are important considerations for retailers seeking to retain market share.
- Many retailers, particularly in Western Europe, have developed private label products that capture these qualities.
- To ensure that their branded products meet quality and safety standards demanded by consumers, retailers coordinate and develop relationships with other upstream sectors in the food supply chain.

- In all markets, market forces are expected to push the evolutionary process toward increased efficiency, higher quality products, and more integrated food supply chains.
- Increased private label products in developed-country markets are contributing to the global trend in more integrated food supply chains.
- Likewise, changes brought about by multinational retailers are upgrading the food marketing sector in many developing countries, while leading to more integrated supply chains serviced by fewer producers.
- The quest for efficiency and cost reduction has encouraged investments in new technologies and joint ventures with marketing intermediaries and producer associations able to meet big volumes and high private standards.
- In a food industry driven by consumers' retail pull, food manufacturers have to continuously reorient themselves to remain competitive.
- Firms that respond to market signals are better able to adjust and maintain their positions in the industry.
- Flexible organizational structures that enable firms to make adjustments at various stages of the production process in response to consumer demand are better suited for the current industry.
- Such a business structure is possible if firms operate in close coordination with producers and other sectors of the supply chain.

2.3 Economics of the Sector

The global food sector was estimated to be worth over US\$3.5 trillion in 2005. However, only 10% of that total is internationally traded as shown in Figure 1 (1).

Figure 1: Trading of global processed foods



Snapshots of some important future sector trends include:

- In 2020 the global food market is forecast to grow to US\$6.35 trillion – an annual compounding rate of 4.8%.
- In 2003 China was 35% the size of the US food market – but by 2020 is expected to become 82% and the second biggest food market in the world (2).
- The US is forecast to decline from 22% of the total global food retail market in 2003 to 19% in 2020. In contrast China's share will grow from 8% to 15%.

- In 2020 the top five food retail markets are predicted to be the US, China, Japan, India, and Russia. Europe as a whole is expected to be 30% of the global market.
- The big future growth area for food and beverage is likely to be in developing countries where annual growth rates in sales of packaged products is projected to reach 7% in upper middle income countries and 28% in lower middle income countries – compared to just 2 – 3% in developed countries (1).
- The growth rate for sales of organic foods averaged 19.5% between 1997 and 2003 to reach US\$10.8 billion in the USA. Sales of packaged organic foods are projected to grow from US\$5.1 billion in 2003 to US\$ 8.6 billion in 2009 – a compound growth rate of almost 10% per annum (3).
- Ageing is also another factor that will impact upon global and local markets – depending upon each country's changing demographic profile. Older people eat less – USDA figures show males the 60+ age group ate 16.1% less daily than 19 – 59 year olds and 60 + females 7.1%. They are also less likely to eat away from home and so by 2020 away from home eating is expected to have declined by 1% and at home eating to have increased by 2% (4).
- Ethnicity also has a significant impact upon how the market evolves. For example Hispanics in the US spend 20% more on eating out each week than the average American. 2nd generation + Hispanics spent much more - \$108 a week - 83% more than the average for all Americans (5).
- Changing ethnic balances locally and globally are going to reshape the food and beverage market.

2.4 Views of Profitability

Based upon our research, there are two approaches emerging that aim to address long-term profitability in a sector where there are relatively few barriers to entry – especially within national markets:

- To offer a value added product through traditional retail channels that differentiates it from commodity food and beverage products that are under constant competitive price pressure.
- To offer a unique high value product solution through emerging rapid growth channels.

Consumers will happily travel down the road to a competing supermarket to save \$1 on a 500 gm packet of ground coffee that normally retails for \$8 – and then equally as happily pay \$5 for one cup of coffee latte at a café overlooking a river or stree scene in the centre of the city.

Whilst many food and beverage manufacturers are concerned about the growing concentration of retail power in the mainstream 'big' food retail sector in the hands of a few major global retail groups (where the packet of coffee is sold), there is a concurrent explosion of value-add channels emerging in the 'unique' part of the sector (where the \$5 cup of coffee is sold). A few examples are shown in Table 1.

Table 1: Traditional and emerging food and beverage channels – being big or unique

TRADITIONAL		EMERGING	
TYPE	FOCUS	TYPE	FOCUS
Supermarkets	Retail	Ethnic supermarkets	Specialist retail
Hypermarkets	Retail	Farmers markets ('new-age')	Experiential
Restaurants & cafes	Experiential	Travel hubs	On-the-move
Hotels & institutions	Service	Gyms/ fitness centres	Health & wellness
Fast food outlets	On-the-move	Event Venues	Experiential
Dietary clubs (e.g. Weightwatchers)	Service and retail	Organic / health food	Specialist retail
		Gourmet	Specialist retail
		Slow food movement	Experiential
		On-line services	Specialist retail
		Gift services	Specialised retail
		Lifestyle coaches	Service
		Convenience stores	Specialised retail
		Home delivery	Specialised service

3 WHAT APPROACH ARE SECTOR PLAYERS TAKING?

3.1 The Big Players

Key emerging major player and influence patterns include the following (1):

- Whilst the sector appears to be dominated by huge multi-national food manufacturers the reality is that, at the global level, the largest food company in the world accounts for less than 3% of the total world food sales.
- In the USA the top 100 food and beverage companies today account for 80% of all the value added food and drink manufacturing.
- The growing concentration of power in the retail sector is also playing a major role in shaping the traditional food and beverage retail market. In 2003 the world's top 30 grocery retailers accounted for 33% of retail sales worldwide and 66% in Europe.
- Some analysts predict there will be only 4 – 5 major players in food and beverage retailing before too long. But large groups such as Tesco are moving from a focus on building large supermarket and hypermarket retail outlets to more local 'high street' convenience outlets that cater for the increasing number of singles and people living time-poor city lifestyles.
- Competing in the global food industry is a complex undertaking, as firms must continually react to the demands of wealthier and more selective consumers for higher quality and more varied products. Markets for individual food products, however, are not becoming global. The fact is consumer demand for food products varies based on income and regional cultural preferences.
- Successful local, regional, and global firms supplying foods to these diverse markets employ increasingly sophisticated technologies and business practices to customize food products to meet local tastes and preferences.
- This growing diversity of customer needs is creating opportunities for smaller companies to successfully compete in the marketplace. And many of these opportunities are associated with the growth of non-traditional channels and product concepts.

3.2 New Zealand as a Small Country Example

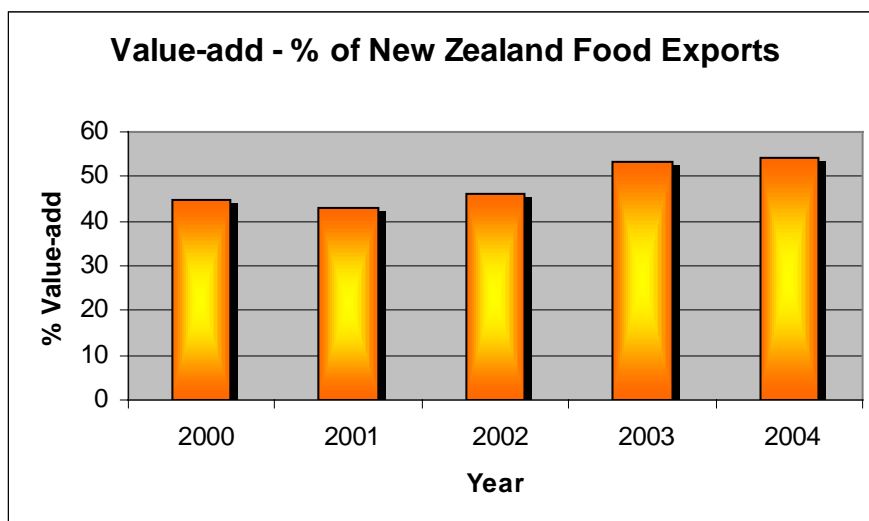
The long-term approach being taken by the food and beverage sector in New Zealand is a more useful example for T&T than looking at what is happening major international markets. This is because it is also a small country and its economy has been built on the back of food commodities – both from land-based agriculture and the surrounding oceans.

The main thrust of research aimed to support development of the New Zealand food and beverage sector includes the following:

- The country's primary sector will need to have transformed certain aspects of its business to maintain and enhance global competitive advantage through greater productivity, value adding, innovation, and a long-term sustainable approach.
- The development of food and beverage products and services will increasingly focus upon the convergence of the nutrition and wellness sectors and there will be a need for skilled scientists to help in the process of innovation, adoption, and adaptation (of overseas advances), and manage these appropriately.
- Building greater value through S & T and innovation throughout the whole food and beverage chain including new product concepts, new processing technologies, and improved tracking and safety systems.

In 2005 the revenue generated by the New Zealand food and beverage manufacturing sector was US\$9.1 billion, up from US\$4.5 billion in 1990. Recent trends are shown in Figure 2 (6). Value adding to basic commodities has been, and remains, a major focus of the sector.

Figure 2: Trends in value-adding of New Zealand food exports



4 SECTOR BUSINESS MODELS AND PLAYER POSITIONS

New Zealand only has one food and beverage multinational in the top 50 globally – dairy group Fonterra (7). Total turnover for the group in 2003 was US\$ 6.6 billion – compared to the number one in the world, Nestle, with turnover of US\$61.6 billion.

The rest of the country's sector is based almost entirely upon small and medium sized enterprises.

4.1 The Sector Approach

Food and beverage exports are extremely important to New Zealand and currently make up over 50% of annual merchandise exports. It is therefore critical to the economic well being of the country and its people for the sector to become more innovative and add greater value.

The country's Food and Beverage Sector Sector Group has developed a global innovation strategy that focuses on what is happening with four key mega-trends (8):

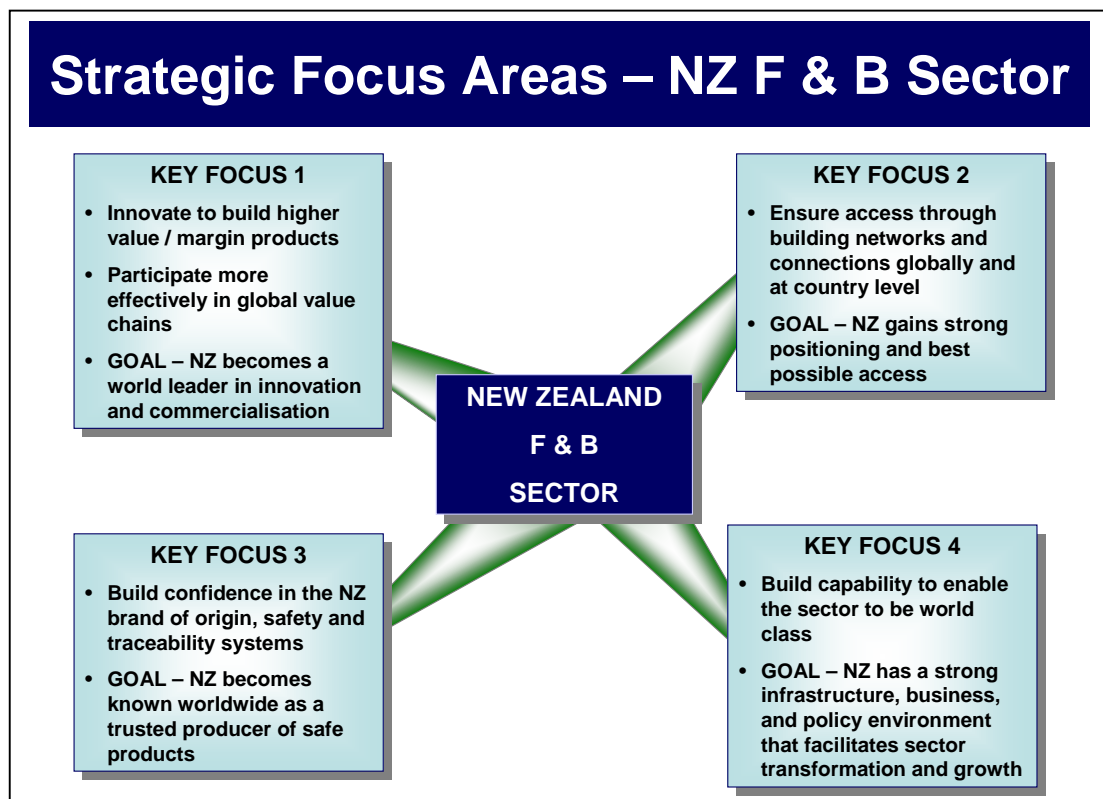
- **Well-being** – food and health are converging.
- **Convenience** – people want meal solutions rather than merely ingredients.
- **Demographics** – there is an affluent ageing population in the west and an emerging middle class in Asia.
- **Social issues** – 'Green' and 'fair trade' issues are affecting consumer attitudes.

Four other trends seen to be shaping the future market include:

- **Consolidation** – companies are merging locally and globally.
- **Segmentation** – the trade in sophisticated processed products is outstripping trade in bulk food commodities.
- **Branding** – the power of fewer, bigger brands is benefiting large-scale enterprises.
- **Food safety** – consumers and retailers are demanding that the bar be raised in terms of health concerns and food security.

The NZ Food and Beverage Sector Strategy has four key focuses - Figure 3.

Figure 3: The four key focuses of the New Zealand F & B Sector Strategy



To help select the highest potential impact projects the sector uses the following criteria:

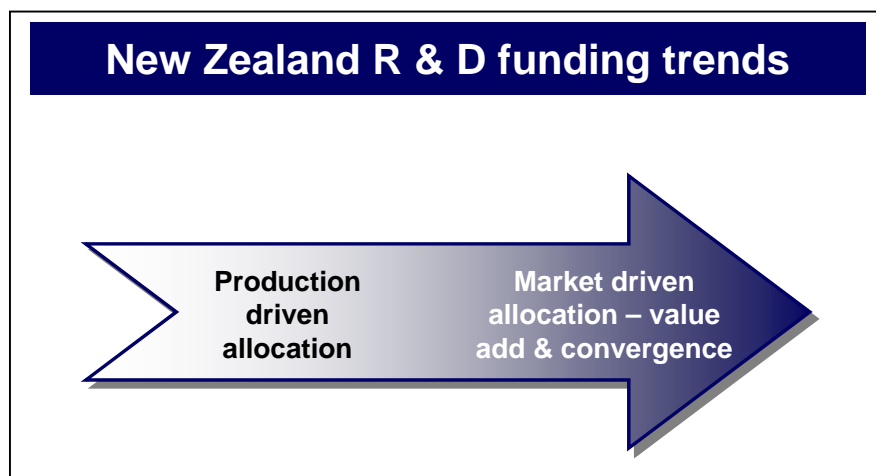
- The existing momentum behind the project.
- Exporters' existing and committed capacity.
- The existence of a significant new or future opportunity – especially specialist niches.
- The project's significance or impact.
- The potential net economic benefit for the country.

Linking into local and global networks of various types (including expatriate New Zealanders) that leverage the position of New Zealand products and brands is a pivotal part of the sector's future strategy

4.2 Science & Technology Research & Development Investment

There has been a marked shift in the approach taken to public investment into S & T focussed research and development as it relates to the food and beverage sector. In the past funding was largely on a non-competitive basis and based upon historical production driven criteria. As part of the New Zealand Government's Growth and Innovation Strategy, the bulk of research funding is now allocated on a contestable basis and needs to meet specific short- and long-term objectives that integrate science and technology focuses within the country's GIS objectives – Figure 4.

Figure 4: Sector funding trends in New Zealand



Access to these R & D funds is open to both the public and private sectors and is dependent upon the case submitted for a funding allocation.

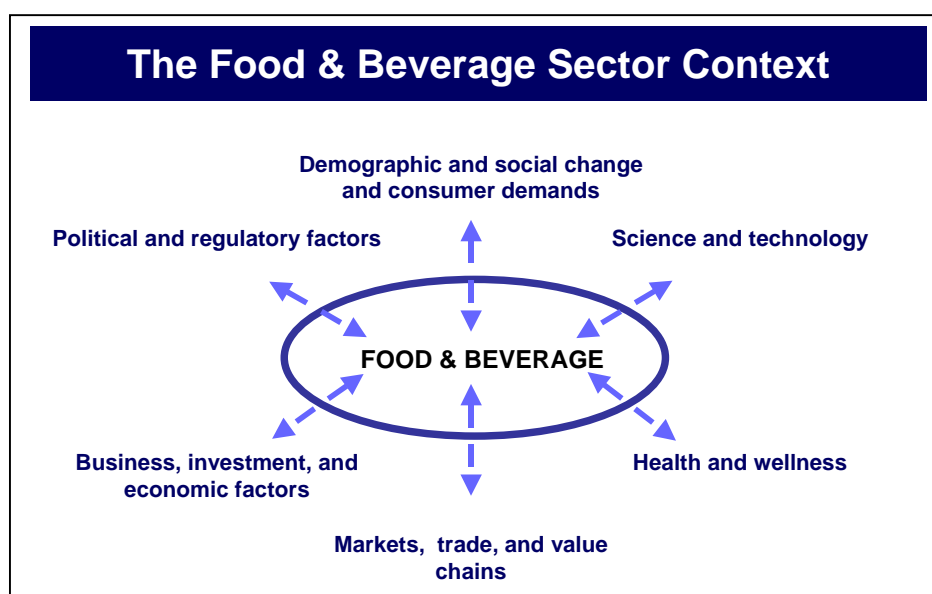
The big shift has been away from traditional production related funding allocation towards projects that have a high value adding or a strong sector convergence focus as shown in Figure: It is becoming difficult today to identify trends in food and beverage research funding in many economies as it is now tending to blur across boundaries between the biotechnology, health, ICT, and physical sciences sectors.

5 HOW THE FOOD & BEVERAGE SECTOR IS EVOLVING

5.1 The Food & Beverage Sector Context

Figure 5 provides an overview of the factors that are shaping the future of the food and beverage sector and which, in turn, the food and beverage sector is shaping.

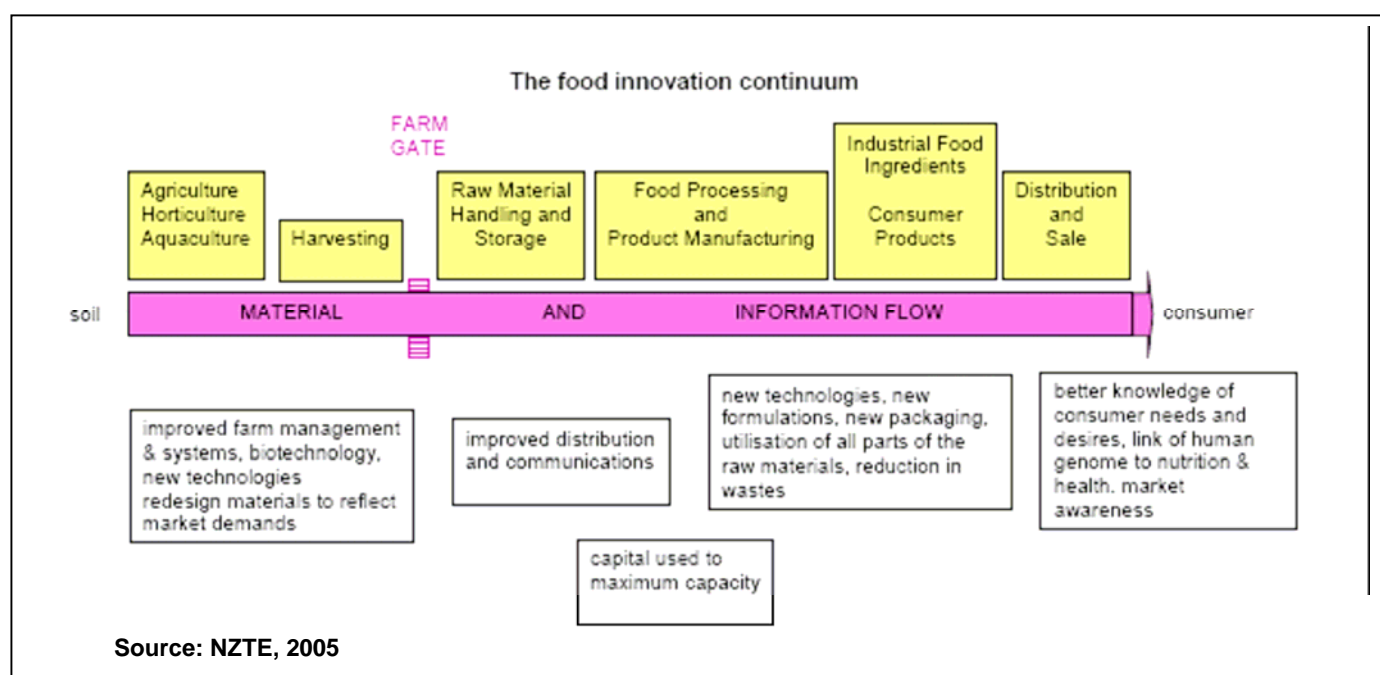
Figure 5: The key parameters shaping the future of food and beverage



5.2 The Food Innovation Continuum

There are opportunities to apply innovation at many points along the sector value chain as demonstrated in Figure 6.

Figure 6: The food innovation continuum (6)



Source: NZTE, 2005

5.2.1 Key Sector Roadmap Influences

How the food and beverage sector evolves depends on being able to monitor and adapt to the following:

Intersections – a fork in the road: Where one path becomes favoured over another e.g. food for fuel versus food for health

Interdependencies – synergy or clash? Where an opportunity e.g. improving the nutritional composition of food, is dependent upon a biotechnological advance e.g. GM plants – and a possible conflict with consumer readiness to accept.

Regulatory readiness – are we future-proofed? Does the country's legislative system help or hinder emerging food and beverage products and services?

The emergence of a possibility space: Where a convergence of technologies emerging from different market sectors can enable totally novel solutions e.g. cholesterol reducing foods

Uncertainties – the need for flexibility: Certainty is only one side of the equation. There are areas of uncertainty that can change the playing field – such as a serious food safety related incident e.g. BSE ('Mad Cow Disease'). The sector needs to be use foresight to be aware of potential uncertainties, develop processes to manage risk, be flexible so it can adapt, and take advantage of any opportunities that arise.

5.2.2 Sector Convergences

There are a number of powerful sector convergences that are shaping the future of the food and beverage sector. A few examples include the following:

The most obvious is the link between nutrition and health. Governments around the world focussing on developing ways that can help them deal with spiralling health care costs – and improving personal nutrition in both the developed and developing world features highly on that agenda.

Advances in biotechnology will also impact upon the future of food and beverage in a multitude of areas such as genomics, which enables the development of personal diets, new biotechnology derived food substrates and food manufacturing processes, and biotechnologies that enhance food tracking and safety monitoring.

Material science and ICT are also impacting – the former in terms of smart packaging and food safety monitoring and sensing systems and the latter in supply chain management and food safety tracking management.

All around the world, the research priorities are increasingly being focused towards multi-disciplinary projects that embrace biological, environmental and physical sciences.

5.3 *Key Food & Beverage Sub-Sectors*

The food and beverage sector is huge and complex at both global and local levels. We believe the major changes that will shape the future of the food and beverage market can be divided into several key sub-sectors.

5.3.1 Overview

In our view there are four main sub-sectors - see Figure 7.

Figure 7: An overview of main food and beverage sub-sectors

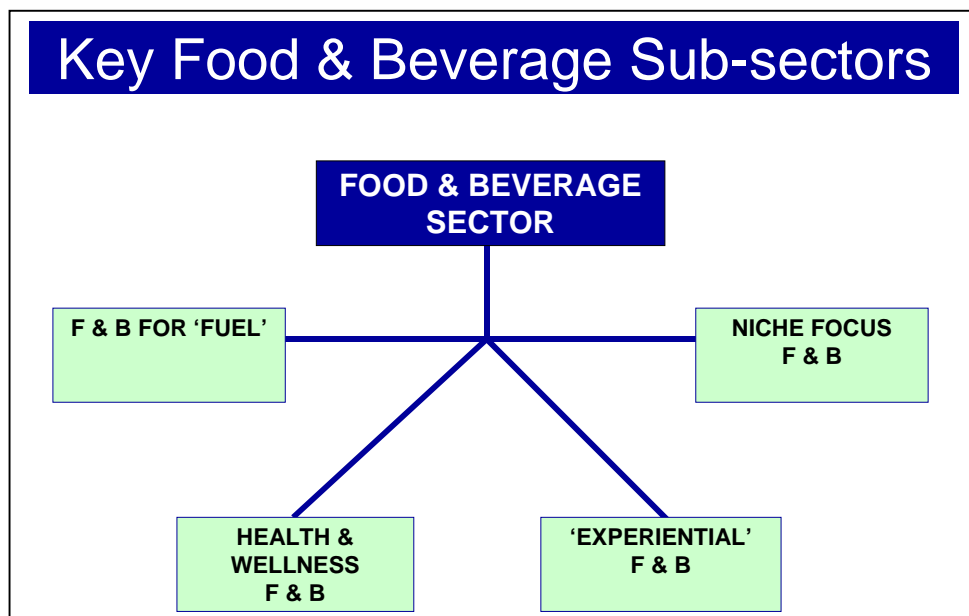
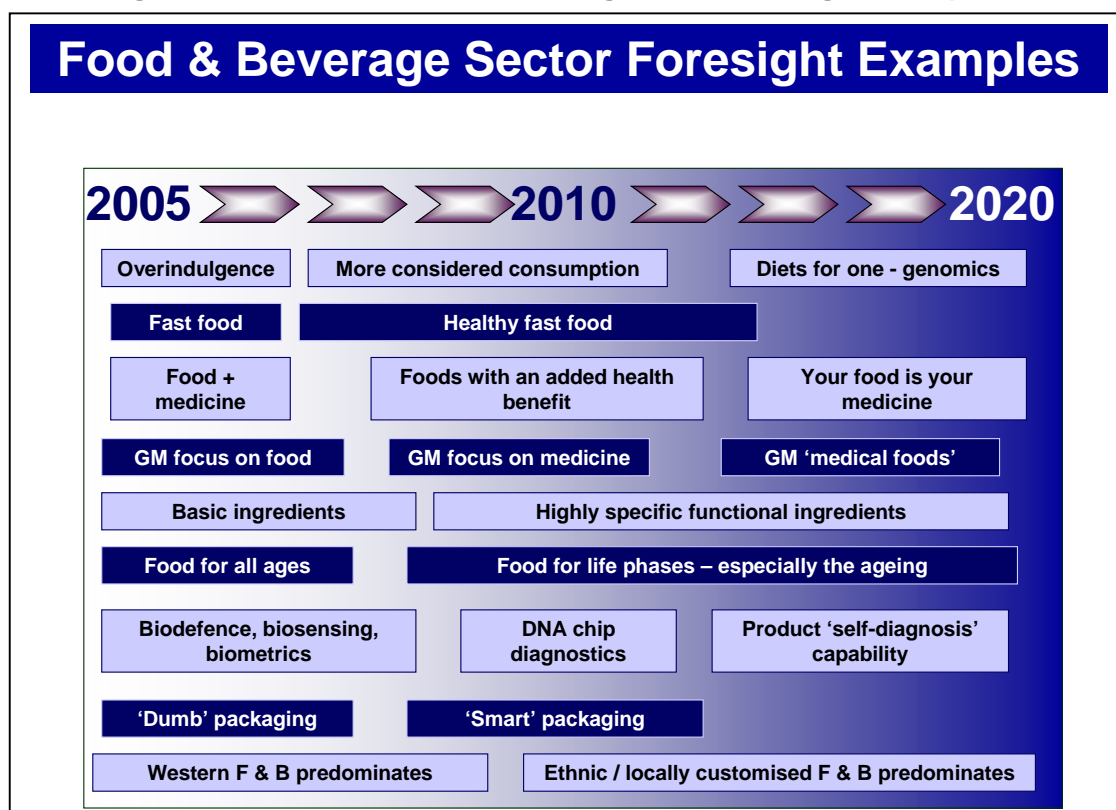


Figure 8 provides examples of trends that are likely to impact as these sub-sectors evolve.

Figure 8: Selected food and beverage sector foresight examples



The following sections, we look at the key overarching drivers, technology trends, paradigm shifts, and uncertainties associated with the various sub-sectors.

5.3.2 **'Food For Fuel' F and B**

This is likely to remain an important area – the 'on the move fill me up quick with what I need' instant solution. This is the mainstay of the global processed food and beverage sector at present. However, legislative and consumer pressures are likely to change the types of products and their make up over the coming decades. The emergence of 'healthy fast foods', the removal of soft drink vending machines in schools, threats of sugar and fat taxes on energy dense snacks, are all precursors of change to come. Key trends impacting on this sub-sector are shown in Table 2.

Table 2: The key overarching drivers, technology and consumer trends, paradigm shifts and uncertainties associated with the future of the 'Food for Fuel' sub-sector

Parameter	'Food for Fuel' F & B Sub-sector
Overarching drivers of growth	<ul style="list-style-type: none"> • S & T – making more from less • Economic – value add, productivity, channels
Technology trends	<ul style="list-style-type: none"> • GM based bio-commodities • Other productivity enhancement avenues • Biotechnology driven functional food substrate production • Functional quality enhancement • Innovative ingredients
Consumer trends	<ul style="list-style-type: none"> • Convenience – give me a gift of time • Smaller portions and individual meals • Food for fuel needs as they relate to phase of life and lifestyle
Paradigm shifts	<ul style="list-style-type: none"> • From high fat – high sugar to greater balance
Uncertainties	<ul style="list-style-type: none"> • Acceptance or rejection of GM – how Generations D & Y react • Lifestyle disease patterns • Consumer preference – F & B fashions • Complexity – the more we know the less we know

5.3.3 **Health & Wellness F & B**

Growing concerns about health and wellness at both personal and governmental level are likely to create a lot of new threats and opportunities for the food and beverage sector. Concerns about health trends in society in all age groups are underpinning change, for example:

- The ageing population – at a time when health budgets and resources are already overstretched - that is concerned about future health and wellness and is taking steps to improve diet and lifestyle deficiencies of the past.
- The young generations – suffering from sedentary lifestyles, poor diets, rising levels of obesity and lifestyle diseases such as diabetes type 2. There is growing global impetus to develop policies and solutions to a major problem – with or without the food and beverage sector's cooperation.

These concerns are driving a move to organics, functional foods, nutraceuticals, healthier foods, natural and healthy beverages – developing a balance where 'food becomes medicine'. It is also driving growth in products that enhance human activity. There is also a religious and ethical component driving this sector – animal welfare, organics, vegetarianism, halal and kosher foods, etc.

The EU view of the health and wellness transition occurring in association with the food and beverage sector is shown in Figure 9. A summary of the key drivers impacting upon this important sub-sector is shown in Table 3.

Figure 9: The health and wellness transition as related to nutrition (9)

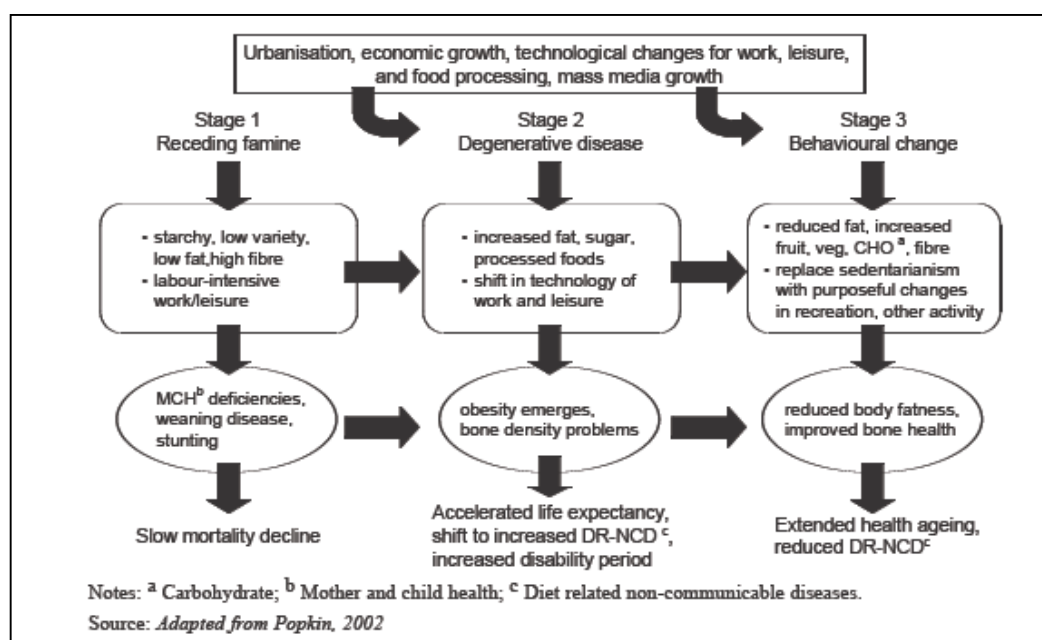


Table 3: The key overarching drivers, technology and consumer trends, paradigm shifts and uncertainties associated with the future of health and wellness F & B

Parameter	Health & Wellness F & B Sub-sector
Overarching drivers of growth	<ul style="list-style-type: none"> • S & T-data collection and analysis • Convergence • Economic – productivity and return on investment – public and private • Environment – sustainability • Governmental – intervention, investment and prevention policies
Technology trends	<ul style="list-style-type: none"> • GM based enhancements of food raw materials • Genomics and customised individual nutrition • Bio-prospecting – for bioactives as supplements or for enhancement • Food fortification • Enhancement • Nutraceuticals
Consumer trends	<ul style="list-style-type: none"> • The growing influence of the baby boomers • Age defiance • The increasing health and wellness problems of youth • Obesity and lifestyle diseases – e.g. diabetes • Food safety • A declining enjoyment of overindulgence • Environmental and ethical concerns – e.g. animal welfare
Paradigm shifts	<ul style="list-style-type: none"> • A shift from food as a fuel to food as a medicine
Uncertainties	<ul style="list-style-type: none"> • How far consumers are prepared to go for health and wellness reasons • Consumer fashion changes • A 'wonder drug' that deals with the obesity problem

5.3.4 'Experiential' F & B

This is an area where food and beverage moves into a high value add zone – where its consumption and enjoyment is within an experiential context. This includes fine dining and eating, fitness and diet venues, travel related F & B experiences, ethnic cuisine and influences, and the growing specialist gourmet sector.

This sub-sector also includes a human 'enhancement' factor that excites sensory and mental functions. Such enhancement includes unique components that regulate such things as flavour release, add visual dimensions to foods and beverages, or create a 'wow' factor, as well as unique venues. A summary of the main drivers is in Table 4.

Table 4: The key overarching drivers, technology and consumer trends, paradigm shifts and uncertainties associated with the future of 'experiential' F & B

Parameter	Experiential F & B Sub-sector
<i>Overarching drivers of growth</i>	<ul style="list-style-type: none"> • S & T-data collection and analysis, convergence • Economic – changes in spending priorities • A blurring of boundaries
<i>Technology trends</i>	<ul style="list-style-type: none"> • Digitalisation • Food and beverage preparation and handling • Innovative ingredients • Enhancement
<i>Consumer trends</i>	<ul style="list-style-type: none"> • Spending priorities – food versus leisure and entertainment • Home or away – consumption venues • Individualism • Ethnic influences • Niche gourmet • Enhancement • Fascination
<i>Paradigm shifts</i>	<ul style="list-style-type: none"> • The setting is becoming more important than the basic need
<i>Uncertainties</i>	<ul style="list-style-type: none"> • The impact of virtual reality – on home or away • Consumer fashions

5.3.5 Niche Focus F & B

This sub-sector embraces a whole range of peripheral developments that are re-shaping the future F & B sector. These include:

- Moves towards a more sustainable food and beverage future throughout the value chain.
- Innovative new technologies in the value chain such as food that tells you when it's going off (intelligent packaging), intelligent bio-sensing technologies relating to quality and safety, home refrigerators that automatically order online when stocks need replacing.
- Tracking technologies, such as emerging RFID technologies, which are integrated into total value chain monitoring systems from farm to household.

Table 5: The key overarching drivers, technology and consumer trends, paradigm shifts and uncertainties associated with the future of niche focus F & B

Parameter	Niche Focus F & B Sub-sector
<i>Overarching drivers of growth</i>	<ul style="list-style-type: none"> • S & T-data collection and analysis • Convergence • Environmental sustainability • Safety • Innovation
<i>Technology trends</i>	<ul style="list-style-type: none"> • Dual use technologies • Diagnostics in real time • Biological threat detection • Bio- and electronic sensors and tracking systems • 'Intelligent' packaging and systems • Sustainable value chains
<i>Consumer trends</i>	<ul style="list-style-type: none"> • Source authentication and safety • Total solutions delivered to the door or venue • Safety and the environment • Gifts of time
<i>Paradigm shifts</i>	<ul style="list-style-type: none"> • From fragmented to integrated value chains • From open to closed cycle systems
<i>Uncertainties</i>	<ul style="list-style-type: none"> • Bioterrorism • Consumer concerns about privacy • Whether options are used for 'good' and / or 'bad' purposes

6 CONSUMER FORESIGHT

The future of any sector depends upon customers – whether they be purchasers of specific products and services, or wish to enjoy a personal benefit – experiential, lifestyle compatible, or enhancement orientated. Understanding tomorrow's consumers and the things they are likely to want and demand is key to mapping the future of any sector.

6.1 The Global Consumer Market

The world's population is ageing – rapidly. Latest estimates indicate it may peak as early as 2050. There are still likely to be an extra 2 billion+ people in the world by the time that peak is reached. However, the make-up of the population in most countries is likely to vary significantly – particularly in wealthy countries.

For example, the average age of the German population is expected to be 45 years within a decade. In Japan, close to 50% of the population will be 50 years of age or older and in India almost 25% by 2025. China is also greying rapidly with 35.6% of the population expected to be 50 years+ by 2025.

This is a major shift – never seen before in the history of mankind. This will impact on markets in every country in a multitude of ways.

6.2 Key Consumer Groups

In tomorrow's world we believe the following consumer groups will be of growing importance and shape tomorrow's markets:

- **Cultural Creatives** – people with knowledge and skills who contribute strongly to the new economy and who also have strong personal values – especially regarding personal health and wellness, ethics, and the environment.
- **Ethnic entrepreneurs** – in both mature and emerging economies. Self-assured, successful and ready to take risks.
- **The new old** - Today's over 60's who may well live until their late 80s or 90s. This generation is healthier than previous generations and will need customized solutions not seen with previous generations of the same age.
- **The 60s generation in their 60s** – more independent and healthier than previous generations – many wish to leave a positive legacy to their children and grand-children before they die.
- **The Baby Boomers** – a self-indulgent generation, always a bit rebellious, determined to fight ageing for as long as possible and prepared to spend on it. The oldest are now reaching 60 years of age.
- **New age women** – self-confident, independent, financially secure, delaying or not having children, increasingly suffering from 'male' as well as 'female' problems – coping with life balancing and stress.
- **Generations Y & D** – the under 28 year olds. Live 50% in a real and 50% in an unreal world. The boundaries between the two are blurring. They face some real personal health and wellness challenges, need constant fascination – including mind altering substances, reshape their bodies and minds without a thought, have grown up with high technology solutions that they don't question.
- **Global nomads** – high net worth individuals who move from country to country and contract to contract and need to support a highly mobile lifestyle.
- **Cyber tribes** – who interact through interfaces such as the Internet. They spread 'fact' and 'fiction' rapidly around the world through their networks.

6.3 Key Consumer Trends to 2020

These have been derived from trends published in a recent Canadian sector report (10):

1. **Ageing populations – more seniors and fewer children**. Implications on the type and quantity of food as well as where it is consumed e.g. older people respond to more intensive flavours as their smell and taste sensory system loses sensitivity. People in aged care facilities eat better if taken to a café or restaurant where the surroundings are more congenial.
2. **An evolving society** – shrinking household size, workforce participation, the age of the independent woman, globalisation, environmental awareness, and media fragmentation. ***Brands will become less of a status symbol and more an expression of individualisation.***
3. **Changing Meal Patterns** - Consumers will become even more disconnected from food preparation. Shopping and eating habits will be sporadic; meal-planning cycles will be shorter, snacking will replace courses as well as whole meals, and food will become even more portable - implications arise for both food and package waste.
4. **Shifting Expenditures** - The move to spending less of our disposable income on food will continue. Retail food purchases will still dominate, while food service will see only modest growth in expenditures. The real shift will be in prepared meals and takeouts as well as experiential-related consumption.
5. **Food for Health** - The most significant health driver will be obesity, with its associated medical conditions, such as cardiovascular disease and diabetes.

One in two adults and one in three children were considered overweight or obese in 2001. The move to adopt healthier lifestyles will be slow. Adults faced with serious health concerns related to their weight may be motivated to change their diet and activity patterns, but it may take a concerted effort to educate this, and the next generation of children, in order to achieve significant lifestyle and diet improvements within the population.

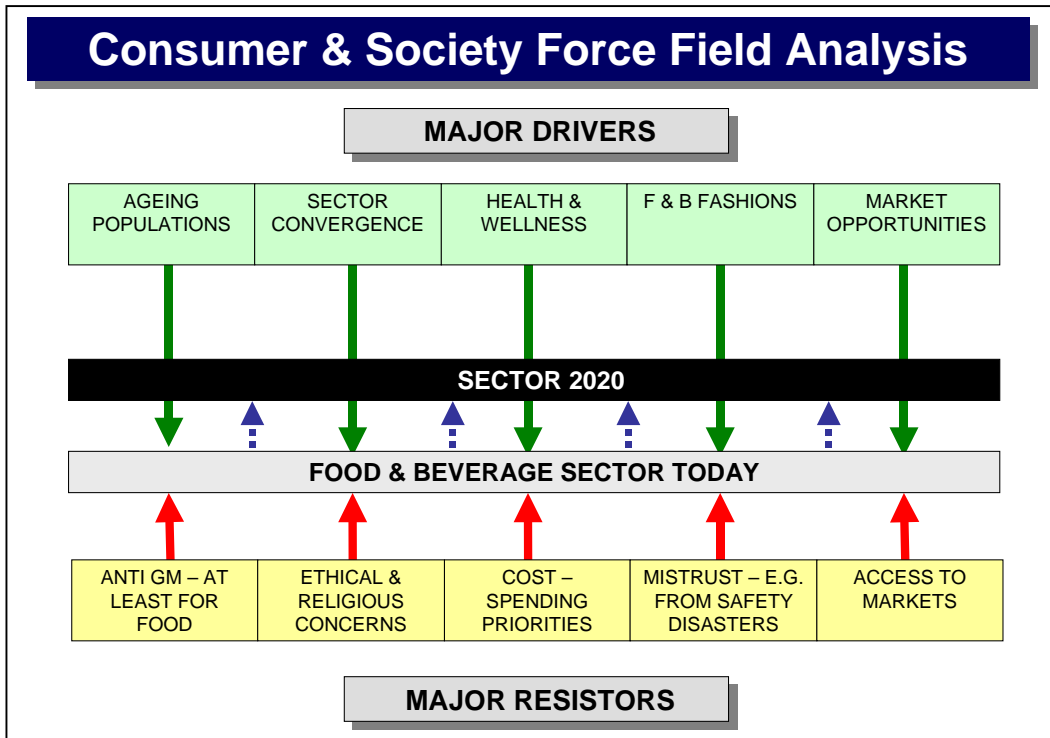
6. **The Educated Consumer... Fads or Trends?** - By raising a generation of label readers, we will become more conscious of nutrition and food ingredients than ever before, with a focus on zero trans-fats, low sodium, healthy/high fibre carbohydrates (the low carb. fad is near dead), reduced sugar, allergen identification, fortification, and health claims. Foods with a function beyond just energy will be in demand, as consumers seek to manage their health and prevent disease.
7. **The New Face of Societies** - Immigration is changing the face of many countries, especially larger urban centres where visible minorities make up 50% of the population in the most advanced cases, and the impact of the traditional residents lessens and diffuses. The resulting food trends; diversification, fusion and blended cuisines, will mean a host of unfamiliar food ingredients, cooking methods and presentation styles. Travel, job mobility and religious influences will also shape the ethnic mix of future cuisine. *There will be opportunities for ethnic nostalgia products.*
8. **No Trade-off for Convenience** - Food marketers are forever trying to find the magic balance between taste, quality, nutrition, convenience, variety, and value for the dollar. The fact is, consumers want it all. The next wave of product differentiation will be to provide fresher, more nutritious, great tasting and/or ethnic foods in the most convenient forms possible. The latest is developing foods for 'one handed eating'.
9. **Veggies Anyone?** - True vegetarianism may not grow dramatically, but consumption of meatless meals will continue to increase. This will be fuelled by perceptions of healthfulness, an emphasis on quick-to-prepare meals, and ethnic food options, among other drivers.
10. **Organic Foods** - Organics, at a modest price premium, will continue to rise, especially as quality and availability matches that of conventionally produced foods.
11. **Small Indulgences** - Gourmet food represents a small indulgence, an affordable luxury, and a reward. Adults in wealthy economies will embrace gourmet foods and boutique brands. Slow foods, high quality, smaller portions, and nutritious foods will gradually replace demand for fast, big and cheap foods.
12. **Food Safety and Production Issues** - Consumer confidence in foods tends to shift with the news story of the day. At the time of writing, trans-fats and animal diseases were issues at the forefront of consumer minds. Others included: 'safe' food production (including genetically engineered foods), food borne illness, additives, contaminants, tampering and bioterrorism, the ethical treatment of animals, country of origin and traceability, and to a lesser extent, acrylamides and irradiation. Lack of consumer confidence, for whichever reason, will lead to avoidance of the offending food.

6.4 How Do These Relate to Future Sector Prospects?

How consumers are likely to influence the future of the food and beverage sector can be illustrated by separating impacts into drivers (characteristics that will favour the sector) and resisters (characteristics that will hold back progress) as shown in Figure 10.

6.4.1 Force Field Analysis

Figure 10: Consumer and society force field analysis



Consumer drivers favouring growth of the food and beverage sector include:

- Anything that will contribute to 'Age Defiance' – especially the Baby Boomer cohort but not only as evidenced by trends in the use of food supplements.
- Personal and global sustainability – health and wellness of the individual and the environment within which they live.
- Anything that gives consumers a 'gift of time', e.g. by providing them with a means of improving health and / or diet but without extra effort.
- Especially for generations Y and D – anything that is cool, experimental, technological, and helps them be different – and deal also with their own quality of life issues, an area causing increasing concern.
- Anything that is different provides fascination and a 'wow' factor.
- Markets become more open globally and allow a greater range of new and innovative products to be imported from a wider range of sources to satisfy consumer niches.

The resistors holding back advances in the food and beverage sector include:

- The anti-GM in food movement – it remains strong and is driven by the ageing boomers and highly educated creative class (however, the use of GM in medicine is not viewed quite so negatively)
- Legislative frameworks that distort local and global markets and impact on the diversity and safety of offers available to consumers
- Cost – is it worth me paying extra for higher health food and beverage products e.g. cholesterol reducing spreads – or should I spend my money on an experience that gives me more pleasure?
- Mistrust – through things going wrong; food safety issues or the perceived impacts of 'big food' companies upon personal health and wellness.
- Access to markets becomes more difficult as governments tighten up regulations and access conditions and restrict consumer choices.

7 SECTOR FORESIGHT – SHAPING THE FOOD & BEVERAGE SECTOR OVER THE NEXT 10 – 20 YEARS

Several tools can be used to develop a picture of how the sector might evolve over the next 10 – 20 years. These include PESTE (an analysis of major influences on the future of the sector from the **P**olitical, **E**conomic, **S**ocial, **T**echnological, and **E**nvironmental perspectives), SWOT (**S**trengths and **W**eaknesses – as seen today; **O**pportunities and **T**hreats – in the future), and global scenarios.

7.1 Sector PESTE

The major future influences on the future of the food and beverage sector from a PESTE perspective are shown in Table 6.

Table 6: PESTE - Major future influences on the food and beverage sector

<i>Political</i>	<ul style="list-style-type: none"> • Legislation impacts – positive and negative • Health and safety • Security – both biological and border • Access to markets
<i>Economic</i>	<ul style="list-style-type: none"> • Returns on investment – how the sector performs relative to other sectors
<i>Social</i>	<ul style="list-style-type: none"> • Consumer demands and fashion trends • Demographic and ethnic shifts • Health and wellness demands • Lifestyles and work styles
<i>Technological</i>	<ul style="list-style-type: none"> • Developing ways of dealing with complexity • New breakthroughs • Convergence of technologies
<i>Environmental</i>	<ul style="list-style-type: none"> • Sustainability – and a convergence between industrial and environmental sustainability focuses

7.2 Sector SWOT

The SWOT tool provides a simple matrix analysis of key areas that are fundamental to scenario development. Table 7 lists some of the more important areas.

Table 7: Food & Beverage sector SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • A 'necessity of life' • Proven investor interest • High levels of efficiency • Easy to enter the sector • Vast experience and knowledge resources • Well developed infrastructures and capabilities 	<ul style="list-style-type: none"> • Low commodity prices • Opposition to GM foods • Animal welfare • Lack of knowledge in emerging fields • A history of poor understanding of consumers • Hang over of production-driven attitudes
Opportunities	Threats
<ul style="list-style-type: none"> • Improved human health and wellness • Sustainable F & B systems • Individual customisation of dietary solutions • Adding value to commodities • Convergence with other sectors offers new options • Consumers always looking for new and unique products and services 	<ul style="list-style-type: none"> • Ageing populations – consuming less food per capita • Unforeseen outcomes that have negative impacts – e.g. GM food • Investors fail to gain the expected returns from innovation • Safety and security scares • Rapid shifts in f & b fashions

7.3 Global Scenarios

How the food and beverage sector evolves is very dependent upon how the world evolves over the coming decades. Using scenarios can be useful for developing a picture of alternative futures and developing an understanding of how to develop a flexible approach to future markets and opportunities. In the following sections we present three sets of scenarios that provides some interesting and different perspectives of influences of the future food and beverage sector.

7.3.1 EU Health and Wellness Scenarios

The following three scenarios developed by a European group of researchers and commercial parties in a project entitled 'Health & Nutrition 2020' provide a useful summary of how things could play out (11).

Scenario 1 – 'Marshealth Plan'

- In this world a societal consensus emerges to undertake a whole systems change in order to curb the threat of rising lifestyle-related chronic diseases. In order to make Europe healthy and competitive again, governments, economic actors, the scientific community and consumers/citizens embark on an

ambitious renewal plan, dubbed the 'Marshhealth Plan' in reference to Europe's miraculous post-WW2 reconstruction.

- Nutrition and health becomes a dominant political theme that pervades all policy areas. Health care systems are gradually shifted from a curative to a preventive logic. Fiscal incentives, and clear and powerful communication campaigns persuade citizens to abandon their "asocial" unhealthy behaviour. A healthy lifestyle becomes the social norm. Dissidents are socially discriminated and financially penalised.
- Industry, seeing growth opportunities in this 'healthy lifestyle' related business, invests heavily in research and new business development. Innovative partnerships between a multitude of industrial partners gives way to irresistible offerings, blending the essential elements of health – nutrition, physical exercise, a positive image and pleasure – into highly personalised products and services.

Scenario 2 – 'Minipoly'

- In this scenario, Europe is too much preoccupied with increasing political and economic problems due to the EU enlargement, security concerns and fierce economic competition to worry about the threat of the rising health care costs. Apart from ratcheting up draconic austerity policies that rapidly hollow out the social security systems, nobody seems to have any solutions.
- By 2010 the crisis moves into higher gear. Standard of living, the average level of health and life expectancy are all in decline in what were once the most affluent European countries.
- The gap between haves and have-nots widens, leading to widespread discontent in the lower layers of society. Forced to address the growing sense of unease in the population with limited resources, governments force the food industry to adhere to elaborate and strictly controlled fortification schemes to assure that food helps to quell the growing disease risk in the population.
- Food becomes fuel in the first place and lawmakers see to it that it is 'healthy' as well. The choice of food products rapidly shrinks for the majority of the population: most of it has become commoditised 'stuff'.
- Technologically some of these are quite ground breaking products combining very low cost, reasonable taste and adequate nutritional value in a very convenient package. But marketing-wise they are distributed in the blandest way conceivable.
- In contrast with a widening bottom of the social pyramid, there is an affluent minority that continues to indulge as usual, countering health problems with lavish personal care programs.
- Towards the scenario time horizon, a new social movement emerges. These are people who simply opt out of the system. They flee their urban ghettos and establish new self-supporting communities based on a mix of traditional and very sophisticated economic activities, laying the foundation of a potential rejuvenation of society.

Scenario 3 - Magic Pill

- This is a world which is continuously struggling to maintain the precarious balance between the constantly rising cost of social security and the capacity of the system to generate enough resources and technological ingenuity to come up with solutions to contain the problem.
- A series of promising scientific breakthroughs create the expectation that somewhere in the future a miracle cure will be found for all kinds of lifestyle-

related diseases. However, this magic pill seems to remain always just out of reach.

- And whilst people are waiting for this panacea to materialise, a structural solution for the health problems is not being developed. In this stressed society that needs to stretch to stay globally competitive, people are unwilling to change their unhealthy lifestyles.
- Always 'on the go', consumers have no time to consider dietary or physical exercise requirements, which are anyway blurred by conflicting information streams.
- Technological advances are neutralised by social factors such as people's carelessness, migration of lowly skilled workers to affluent areas, environmental pollution, and the effects of global warming.
- The net result of this is a precarious balance: a social security system that can be kept afloat, but only just. The danger of a systemic crisis is never far away.

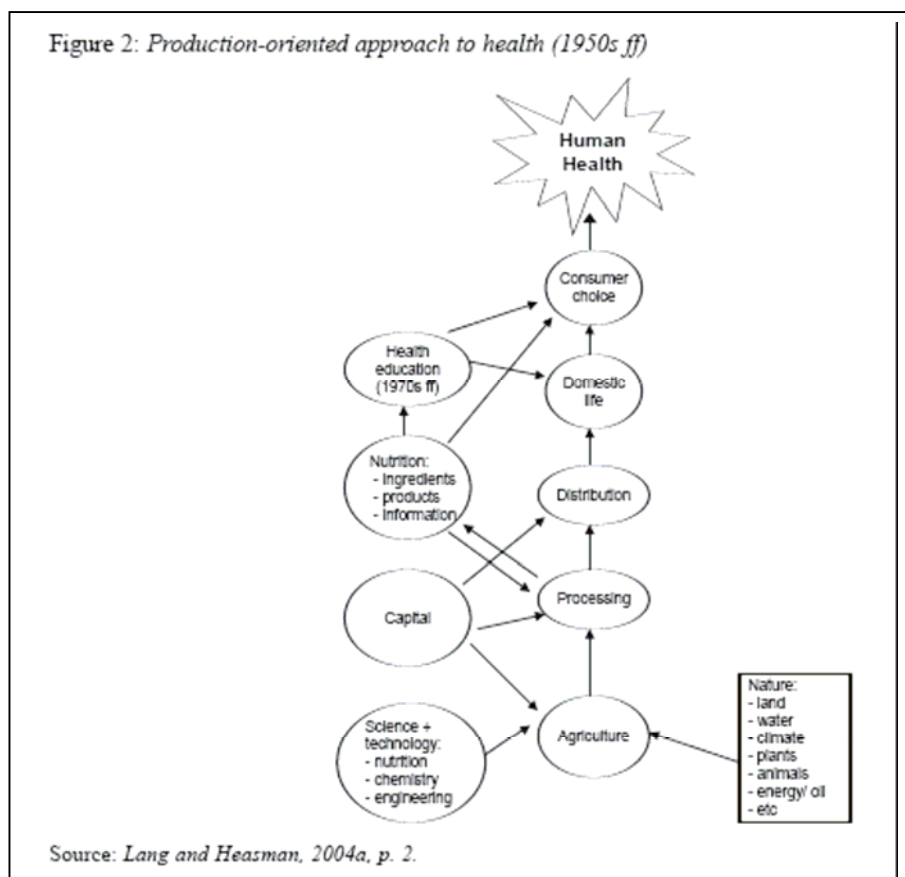
7.3.2 Science & Technology Scenarios

These two future scenarios recently released by European Monitoring Centre on Change scenarios are valuable from a future science and technology perspective (12).

The background

Consumer health is suffering from over-consumption and mal-consumption driven by a production-oriented paradigm – both in the food and beverage sector and the public policy and legislative sector. This was largely because a production oriented approach to the sector and human health was being pursued.

Figure 11: The production oriented approach to nutrition and health



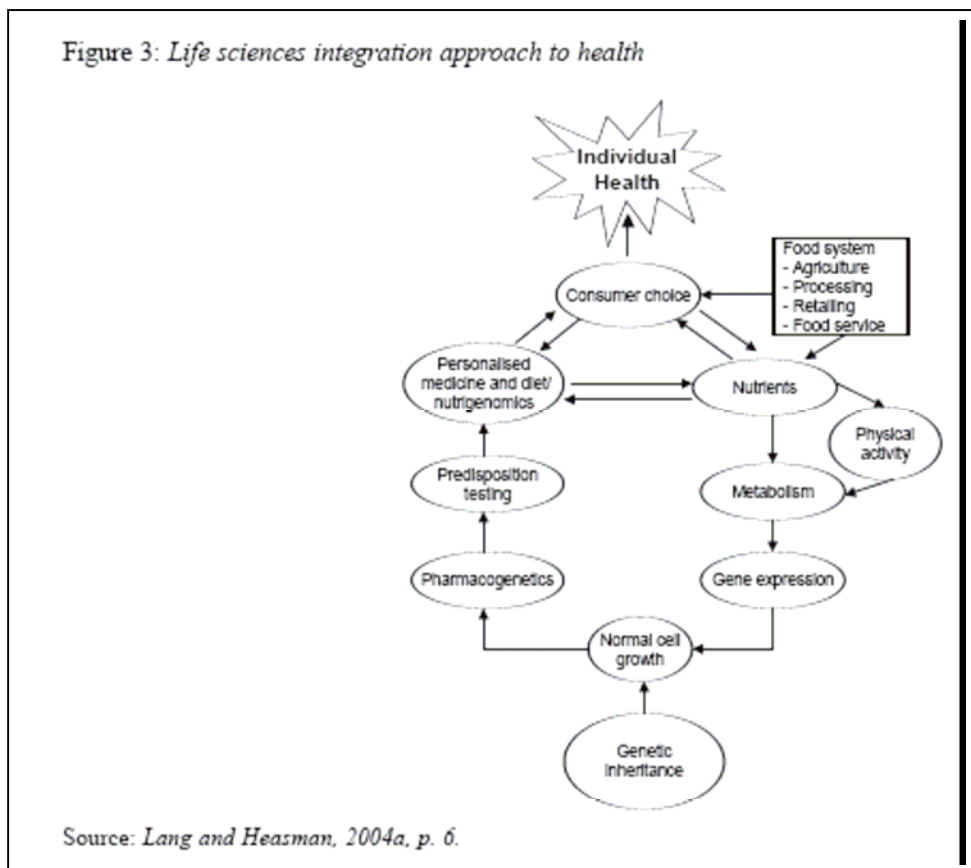
Two scenarios developed from a S & T perspective for the for the future of the sector are as follows:

Life sciences integration scenario

- The focus is on the individual, the personalization of diet, and the exercise of individual consumer choice to determine health. Life sciences act on many elements within the system in terms of understanding the individual's genetic make-up and body chemistry.
- In this way, food manufacturers and retailers are able to test individuals for their predisposition to certain diseases and offer personalized medicine and diets through the growing science of 'nutrigenomics'. Nutrigenomics enables us to predict those who can tolerate a diet high in fats and not get cancer or heart disease.
- The ability to understand the interaction of genes, diet, ingredients and lifestyle has made it possible to deliver a personalized approach to food and health.
- Unsurprisingly, this scenario creates a growing divide between those who are sufficiently well educated and who have the necessary income, and the less well-educated and the less well-off.
- Those able to partake of the services and products on offer enjoy healthy lifestyles, take more physical exercise, become ill less often and live longer.
- However, in this scenario, a growing proportion of those without the necessary resources become increasingly unhealthy, overweight and die younger.
- The scenario emerged because of the considerable investment in research and development into functional foods, biotechnology, gene therapy and nutrigenomics by food companies and governments in the early 21st century.
- The lobbying power of some vested interests, notably the meat, grain and sugar industries and the processed food industry, enabled food companies to successfully deflect criticisms from some nutritional and environmental scientists.
- They argued in favour of more public intervention to support both societies' health as well as the environment. Even so, the *Life sciences integration scenario* has been able to incorporate social and biochemical approaches to nutrition. Nutrition science tends to be based on an individualised model of health, rather than at the level of populations.
- It therefore lends itself naturally in support of this scenario with its emphasis on the individual. Governments generally support the life sciences integration approach for several reasons. First, it offers the promise of a quick, technological fix. Second, it frees them from having to introduce potentially unpopular policies that try to change the behaviour of a large proportion of the population, such as long-term policies promoting a lot more physical exercise.

A diagrammatic summary of this scenario is shown in Figure 12.

Figure 12: An overview of the 'Life Sciences Scenario'



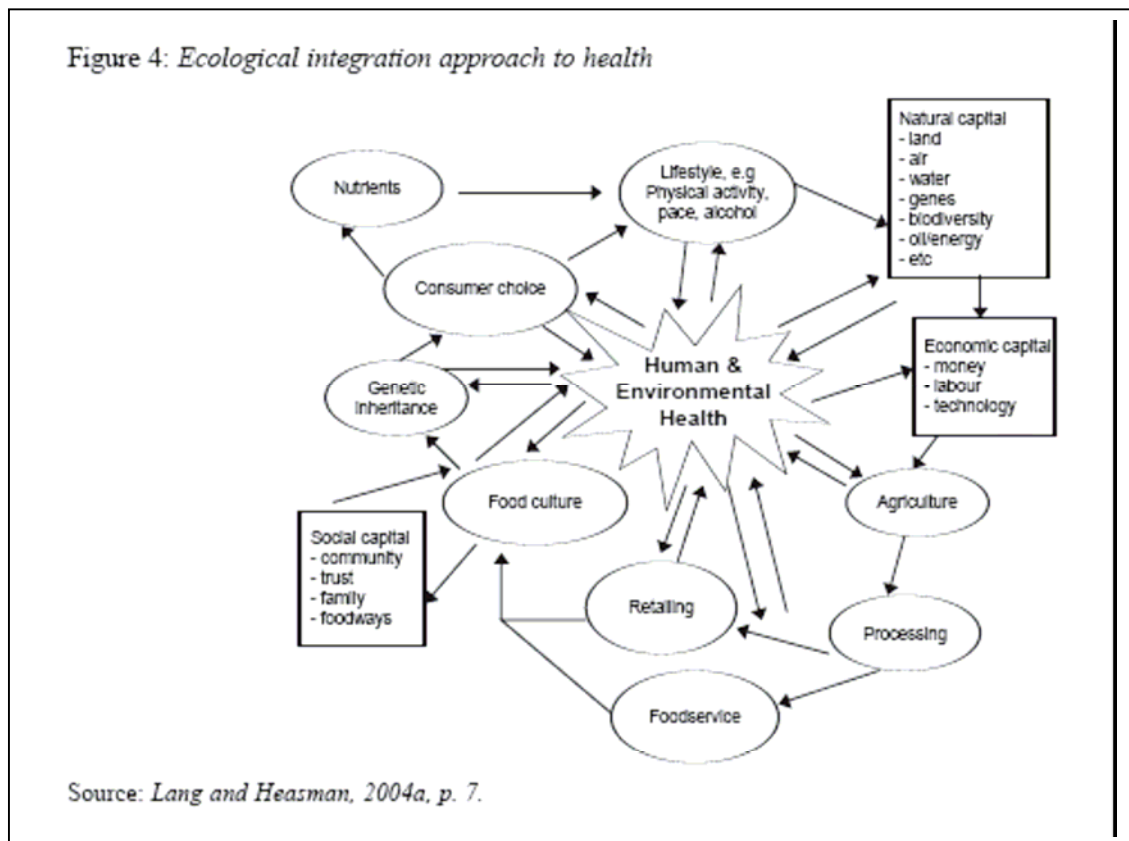
Ecological integration scenario

- In this scenario the emphasis is on the concerns of nutritionists and environmental scientists. Rather than focusing on individual dietary and health needs, the food system has been viewed as a whole to improve human and environmental health. Ever-increasing levels of obesity, other diet-related diseases and continuing concerns about poor public health prompted this change in direction.
- This approach gained widespread popular support after a succession of food safety crises in the early 21st century. The public became alarmed at food contamination scares, the discovery of a virulent new variant of Creutzfeldt-Jakob Disease thought to be caused by contamination of cattle feed, and contamination of organic foods with GM organisms (GMOs).
- All of these concerns challenged the neo-liberal assumption that the role of the state in food supply should be one of 'hands-off'. The litany of food safety scandals persuaded both suppliers and consumers that public health is in the interests of all. Of course, some complained about the dangers of a 'nanny state', but the majority of the population favoured government intervention.
- With human and environmental health at its heart, all elements in the system now take a more responsible approach to improving public health and sustainable development. Governments adopt a 'carrot and stick' approach.
- Public policies have been introduced to build exercise into our daily lives. This has meant significant investment in sport and leisure facilities and much greater emphasis on physical education in schools. Food manufacturers and retailers support the policy and there are many company-sponsored initiatives to

encourage more exercise – e.g. health and fitness centres at supermarkets, sponsored ‘fun runs’ and school sports. Tax incentives encourage membership of health clubs and other sports-related organisations.

- In terms of health education, the focus has been on improving individual nutrition and diet. Television commercials daily encourage more exercise and a balanced diet with less sugar and fat. Companies now require their employees to have an annual health check-up. Overweight persons are given a programme of physical activity as well as dietary advice.
- National health services introduce ‘top-up’ charges for those who are deemed to be clinically obese. Following a number of successful legal actions taken by overweight customers against fast-food restaurants, the fat content in hamburgers has been reduced and healthy options are both readily available and encouraged. Food manufacturers and retailers, worried that they too could be subject to similar claims, introduced warning signs on foods containing high levels of fat, sugar and salt. Television advertising on certain foods is banned, especially during children’s programmes.
- Labelling of food has become of key importance and food manufacturers are prosecuted if their products are incorrectly labelled. Ensuring that a product is free of genetically modified organisms (GMOs) is increasingly difficult and this has led food manufacturers and supermarkets to avoid GMOs altogether. Realising that there is no market for GM foods, the biotechnology companies have gone out of business.
- This new approach is not a quick fix however, and there are still complaints about the ‘nanny state’. But there are indications that these policies are beginning to work, if slowly. Levels of obesity are falling and fewer people are dying of coronary heart disease.

Figure 13: Overview of the ‘Ecological Integration Scenario’



7.3.3 NZ Food & Beverage Sector Future Scenarios (13)

Scenario 1, 'Business as usual'. Thanks to favourable trading conditions (underpinned by constantly rising commodity prices) and a steady flow of innovative products and processes, the five per cent compound annual growth rate achieved by the sector over the last decade can be sustained into the future.

In this scenario the S&T focus enables producers to keep pace with the changing demands of consumers and the regulatory requirements of trading partners. Productivity gains ensure that costs are contained, production volumes expand without having to farm more land or use more water, and revenue flows are sufficient to support rising incomes for producers, processors, and their employees.

Scenario 2, 'Margin squeeze', tells a story of pressure coming on New Zealand producers from two sources: aggressive food retailers in our key markets and emerging low-cost competitors. This combination of factors forces producers to accept lower net returns in order to stay in the game. But for how long?

In this scenario, S&T is not able to prevent an inevitable decline in the country's food and beverage sector.

Scenario 3, 'Transformation'; New Zealand's world-class capability as a commodity supplier is enhanced by the development of new, differentiated, and branded products sold at premium prices into niche markets.

In this scenario S&T impacts in many areas:

- There is a concerted effort to lift productivity through more effective and better-aligned scientific research and effective technology transfer so that the best ideas and processes are widely deployed. Concerted efforts are made to raise skill levels across the sector.
- Product differentiation is achieved as a result of better government support for industry development. Firms in the sector work together on developing and testing products, showcasing the potential of New Zealand producers, and sharing the costs of penetrating and developing new markets. The domestic market provides a launching pad for new products that are then sold to the rest of the world.
- Following on from the success of the wine industry, potential new industry growth leaders are found and nurtured, achieving strong growth and allowing producers to penetrate wholly new markets.
- Companies source supplies of product from around the world to ensure sufficient production volume and year-round supply to markets. Strategic alliances are formed with the users of ingredients and with retail supermarket chains.
- The sector seeks out new product development opportunities in health and nutrition.
- There is a continuous development of cross-over activities. Food and beverage production integrates with tourism and health-related industries, and combination foods are sold into the convenience markets in the higher income countries.

8 FINAL COMMENT

We have developed a global view of food and beverage sector and key sub-sectors that provides a context for looking at potential opportunities which T&T can choose as 'best bet' opportunities.

The challenge is to identify areas that are going to be of the greatest relevance in markets 10 – 20 years from now rather than in today's context as the whole sector is changing rapidly.

As the various global scenarios demonstrate, how the sector evolves will depend upon how the various scenarios play out. At present parts of all three are in play and impacting differently in different parts of the world.

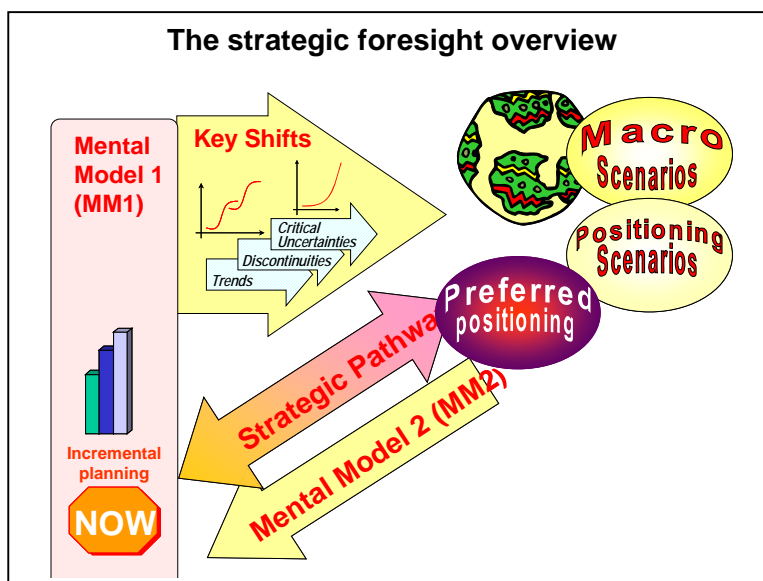
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APPENDIX 2: GLOBAL FORESIGHT OVERVIEW

To develop a context for the food and beverage sector and the opportunities it may offer to T&T economically and socially, we first need to look at the global picture of the sector – the trends, players and positioning, then develop scenarios which relate to the T&T situation within that global picture, and then a way of determining the strategic positioning T&T might take to exploit opportunities the sector offers.

Figure 14: The overarching strategic foresight framework



A key part of developing an understanding of how the global picture is being shaped is knowing the meta-trends that are driving change. We call these the 7 Tsunamis of Change. These global drivers are shaping the future of our lives, of markets, of business, of the world we live in. The Tsunamis are changing the landscape within we will operate – destroying some things, changing other things, causing new things to be build in their aftermath.

Figure 15: Meta-trends – The 7 Tsunamis of Change

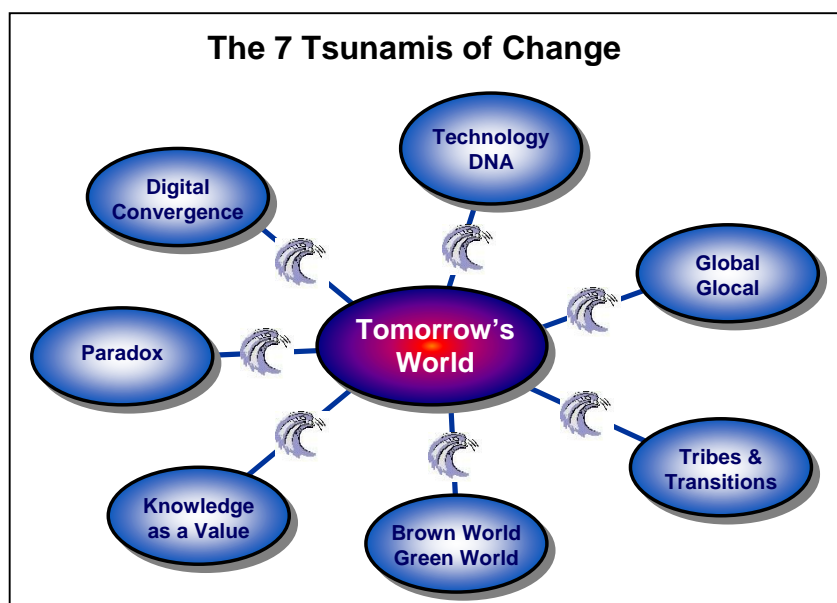


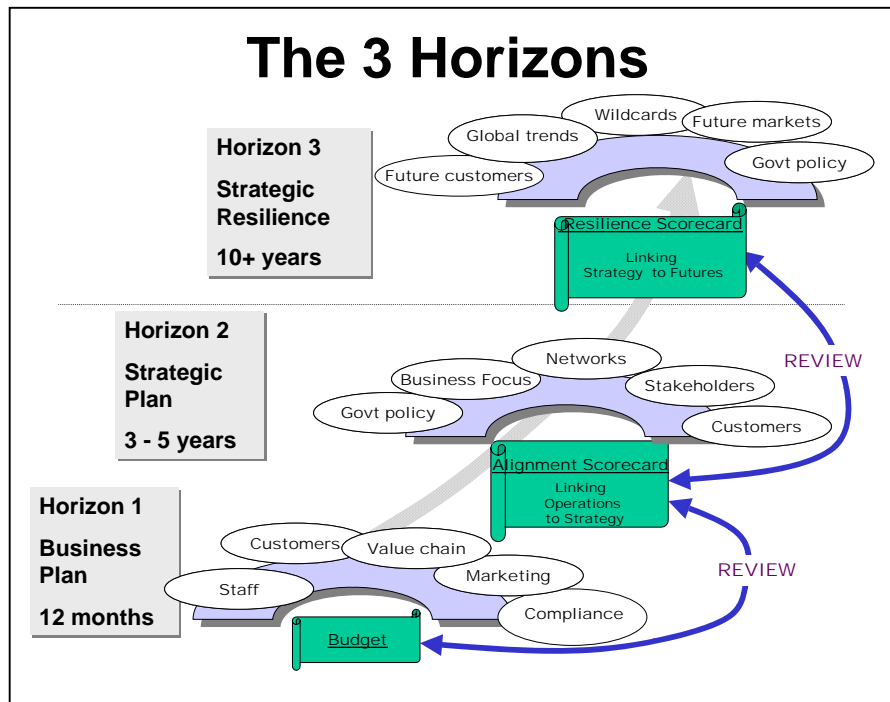
Table 8 provides a brief overview of the areas each Tsunami is driving.

Table 8: Areas where each Tsunami of Change is impacting

TSUNAMI	CHARACTERISTICS
<i>Digital Convergence</i>	<ul style="list-style-type: none"> • Chips in everything • Total interconnectivity • Virtuality
<i>Technology DNA</i>	<ul style="list-style-type: none"> • Biological/technological convergence • Cumulative innovations • Re-shaping of life itself
<i>Global Glocal</i>	<ul style="list-style-type: none"> • Global village • Cultural convergence • Biggest or most unique
<i>Tribes & Tribulations</i>	<ul style="list-style-type: none"> • The digital divide • Tribalism • Changing lifestyles / work styles
<i>Brown World, Green World</i>	<ul style="list-style-type: none"> • Climate change • Resource productivity • Water, air, energy
<i>Knowledge as a Value</i>	<ul style="list-style-type: none"> • Hierarchy of knowledge and value • Knowledge management • Consumer Power
<i>Paradox</i>	<ul style="list-style-type: none"> • Unexpected effects • Living with degrees of grey versus black and white • Solutions take opposites into consideration

The long-term views we develop through foresight help us develop a picture of how a business Horizon 3 may look 10 – 20 years from now – which is often quite different to how it looks today. This horizon helps us understand the future destination we wish to aim for – the desired scenario. By backcasting from Horizon 3 we can then develop a 3 – 5 year strategic plan (Horizon 2) and then a short- term business or implementation plan (Horizon 1) – see Figure 16. By taking this approach, commercialisation of opportunities discovered during the research and evaluation process is made within a long-term context.

Figure 16: The three business Horizons



There are a number of tools and processes that can be used to help shape Horizon 3. These include foresight research, the PESTE analysis, scenario development (for the global sector), developing a view of the long-term destination for the sector and country, and then local scenarios that provide a framework for decision making.

Figure 17: Tools and processes for developing a Horizon 3 perspective

