Industry as a partner for sustainable development

Food and Drink

Confederation of the Food and Drink Industries of the EU (CIAA)

Developed through a multi-stakeholder process facilitated by:

UNEP

First published in the United Kingdom in 2002.

ISBN: 92-807-2185-2

Production

Design by Beacon Creative
+44 (0) 1825 768811
Printed by The Beacon Press using their *pure***print** environmental print technology that is both water and alcohol free. No film processing chemicals were used and 90% of the cleaning solvent was recycled.

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A report prepared by:

Confederation of the Food and Drink Industries of the EU (CIAA)
In collaboration with ABA, ABIA, AFFI, AFGC, ANDI, FCPMC, FIAL, IDFA, JAFIC, NFPA, SOFOFA, food and drink associations from Nigeria, The Philippines and South Africa.

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Disclaimer

In a multi-stakeholder consultation facilitated by the United Nations Environment Programme, a number of groups (including representatives from non-governmental organisations, labour unions, research institutes and national governments) provided comments on a preliminary draft of this report prepared by the Confederation of the Food and Drink Industries of the EU (CIAA). The report was then revised, benefiting from stakeholder perspectives and input. The views expressed in the report remain those of the authors, and do not necessarily reflect the views of the United Nat ions Environment Programme or the individuals and organisations that participated in the consultation. Exceptionally, the consulation process for this report was carried out via e-mail due to time constraints.

Contents

Foreword

The food and drink industry has a long history of providing consumers with safe, wholesome, high quality products. From its beginnings as a cottage craft selling food and beverage products primarily at the local and regional levels, it has become an important business that enables access to a huge cornucopia of products to satisfy consumers' needs.

The 20th century witnessed unparalleled advances in food science, food technology, nutrition and packaging. Innovations such as pasteurisation, canning, freezing and nutrient fortification, to name just a few, improved the quality, safety and availability of food products, improvements that have dramatically enhanced the quality of life for consumers all over the world.

Over the last decades, the protection of the environment has become a major preoccupation for mankind. In some areas and in some countries, a great amount of progress has been achieved. However, much remains to be done.

For the food and drink industry, preserving the environment in which our raw materials are grown has always been a concern. For over half a century, our engineers have pioneered environmental work the world over. The first modern wastewater treatment plants in Europe were already built in the 1930s, when neither local expectations nor legislation required environmental safeguards of any kind – even the term 'environment' in its current context did not exist at that time!

During the last few years, many companies have decided to increase their efforts in favour of the protection of the environment – environmental officers have been appointed, policies on the environment have been published, environmental surveys of sites have been conducted and have allowed priorities and objectives to be set. Particular attention has been devoted to packaging and environment, training has been reinforced and we have started to report about environmental issues. Environmental management systems have been implemented.

Many food companies have adhered to the Business Charter for Sustainable Development of the International Chamber of Commerce (ICC) since its publication in 1991. We feel we have achieved a good level of integration of environmental considerations throughout our business activities, in order to continually improve the environmental performance of our industry.

However, respect for the environment is part of a broader perspective, which is to contribute to achieving sustainable development. Measures for environmental protection often trigger beneficial economic and social effects, and vice-versa. Since the Rio de Janeiro Summit in 1992, all of society, be it governments, industry, non-governmental organisations (NGOs) or others, have tried to translate the sustainable development concept into reality. We believe that sustainable development should be seen as a continuous improvement process that uses innovative ways to increase eco-efficiency with the goal of a more sustainable food production and consumption system.

This report is the contribution of the food and drink industry to the United Nations World Summit on Sustainable Development being held in Johannesburg, South Africa. It has been prepared in co-operation with the food and drink associations from Australia, Brazil, Canada, Chile, Colombia, the European Union, Japan, Nigeria, the Philippines, South Africa, Switzerland, and United States. A number of companies were actively involved through these associations, some of them are

specifically mentioned in this report. We would like to thank them all. We are also grateful for the help and support from UNEP, the organiser of this and many other sector reports.

This report shows that much has already been achieved and that in many cases the food and drink industry has been at the forefront of the development. It also identifies some of the remaining challenges and future goals. We do not pretend to be perfect, nor that we have already done everything that could be done. We believe continuous improvement is the key. As science and technology advance and, with them, the understanding of the complex interactions between agriculture, industrial production, consumption and trade, we will find and implement new ways to deal with the challenges of sustainable development

We are not exhaustive in this report. We present case studies and examples of achievements of the food and drink industry from many parts of the world, but due to our great diversity, we do not yet have consolidated figures, which show the global situation. This will be a challenge for the future.

To conclude, a culture of partnership between industry, suppliers, local communities, consumers, retailers, committed consumer and environmental associations and NGOs will help achieving three long-term goals:

1. enhance economic growth and the international competitiveness of the food and drink industry;
2. ensure food safety, health, nutrition, well-being, education, and thus improving the access to a better and healthy food for the public;
3. protect the environment where our raw materials are grown and in which we operate.

All this is the contribution of the food and drink industry to sustainable development. We hope this report will serve as a basis for further discussion.

Executive summary: Continuous improvement towards sustainability

The contribution of the food and drink industry

Prepared for the World Summit on Sustainable Development 2002 (WSSD), this report presents an overview of the progress within the food and drink (F&D) industry since the Rio de Janeiro Summit in 1992 on the implementation of sustainable development and attempts to identify remaining challenges. It represents a collaborative effort by numerous companies and trade associations around the world to present their focus on the three pillars of sustainability, economy, environment and society.

Due to the size and complexity of the overall industry, it was not possible to comprehensively address all activities of this sector. Wherever possible, case studies and examples are used to illustrate the progress.

The F&D industry transforms agricultural raw materials into safe, convenient, good tasting and nutritious products for consumers. It is a diverse industry that ranges from small and medium-sized enterprises (SMEs) to major multinational companies.

Today, an estimated USD4,000 billion is spent on food, worldwide: 73% in retail outlets and 27% in food service establishments. The F&D industry is a stable, highly competitive sector that is a major contributor to local, national and regional economies. Trade in agri-food products has expanded significantly, with total global exports increasing from USD250 billion in 1988 to USD442 billion in 2000. Over the past ten years, the F&D industry has experienced a steady and healthy economic growth. The F&D industry is one of the world's largest employers. For every job in the F&D sector, many additional jobs are created for retailers, suppliers and other business partners.

The potential for environmental impact, albeit minor compared with other sectors, is taken seriously by the F&D industry. Environmental considerations are addressed throughout the food supply chain, from purchase of raw materials to final consumer products.

F&D companies are generally not involved in the production of raw materials. They work together with their suppliers to promote sustainable agricultural practices. This report highlights agricultural sustainability issues including pest and disease management, equitable pricing and soil/water conservation and the accomplishments related to cocoa, coffee, fish, fruits and vegetables, milk, oils and fats, sugar and tea.

The long-term objective of the F&D industry is to encourage further progress so that sustainable agricultural practices become increasingly systematic and globally widespread. Industry will continue to foster this objective through partnerships and assistance and through consensus building with stakeholders in the food supply chain.

The F&D industry has maintained a continuous commitment to pursuing eco-efficiency improvements in manufacturing. Such improvements often result in significant cost savings, but can also require investments in capital, time and human resources.

Many companies have established environmental performance indicators (EPIs) that, together with factory audits, are used to measure progress and set future objectives. A summary of EPIs reported by selected associations and companies within the F&D industry shows clear progress on the part of the F&D industry towards achieving eco-efficiency (see table on page 8). This is true for nearly all indicators, in particular for those related to water and energy.

Table 1: F&D industry environmental performance indicators (for absolute data, please consult individual reports)

EPIs reported by companies and associations[1]:
% change (companies + Belgium, United States) or latest figures (Australia, United Kingdom)

Indicator	Belgium 1995-1998[2, 3]	Danone 1990-1999[4]	Heineken 1997-2000[5]	Nestlé 1997-2000[8]	P&G 1990-00/01[10]	Unilever 1996-2000[11]	United States 1996-1999[12]	Australia[16]	UK[19]
Water consumption	10%	-28%	-12%[6]	-24%	1.3%	-16%		3-33 m^3/t[17]	9.24 m^3/t
Energy consumption	-4%			-21%	-58%	-18%		2.1-6.8 GJ/t[17]	
Fuel/thermal energy consumption		-39%	-6%[6]						
Electricity consumption		-27%	-5%[6]						
Wastewater (generation)			-14%[6]	-29%					
Wastewater (COD)	-21%		-2%[6]		-45%	-29%			16 kg/t
Greenhouse gases (CO_2)				-21%	-72%	-16%			
Air acidification potential (SOx & NOx)				-33%					
SOx emissions			20%[6]			-40%			
NOx emissions			25%[6]				-1%		
Ozone depleting substances (emissions)			60%[7]	-97%[9]					
Air emissions (particulates, VOCs, CO, NOx, SOx)					-35%		-2%[13]		
By-products/waste generation	-9%			-32%					
By-products/waste disposed				-23%	-23%				
Hazardous waste			150%[7]		-85%	-60%			0.004 kg/t
Non-hazardous waste			22%[7]		-2%	-22%	-87%[14, 15]		
Recycling rates	17%				3%			38-98%[18]	
Landfilled waste	-37%							5-46 kg/t[17]	

1. Indicator definitions vary between companies, associations and countries. Comparison is made on units per unit of production, unless otherwise indicated
2. Data based on total consumption and emissions not per tonne product during production increase of 13%
3. Belgium Federation of Food Industry Environmental Report 1999
4. Danone *Social Responsibility 2000 Report*. Data based on dairy products in Europe.
5. The scope of reporting has been extended from 1997 to 2000.
6. Specific figures for breweries only
7. Data for all Heineken operations in absolute figures
8. Nestlé Management Report 2001
9. Since 1986
10. Procter & Gamble 2001 Sustainability Report
11. Unilever http//www.unilever.com – these figures relate only to the food production department
12. US Food Sector Report for WSSD, 2001
13. CO emissions
14. Reduction in the quantity of waste shipped off site with respect to waste regulated under the Resource Conservation and Recovery Act (RCRA)
15. Period from 1991 to 1996
16. Australian Food and Grocery Council Environment Report 2001
17. Range based on different product categories
18. Range based on different companies reporting
19. United Kingdom F&D Federation Members Environmental Survey 2000

Water is essential for life. Of the total fresh water usage, 69% is for agriculture, 23% for industrial purposes and 8% for domestic use. Water is also essential for the F&D industry. It is required for most manufacturing processes and is used by consumers in preparation of food. It is a key ingredient for the beverage and bottled water sectors. The F&D industry has taken many proactive measures to reduce, reuse and recycle water and to ensure wastewater reduction and treatment.

Packaging plays an important role in the F&D industry. It serves to protect F&D products from spoilage, tampering and damage during distribution, to preserve product quality and to provide convenience and information to consumers. In recent years, there has been an increased focus on packaging and its environmental impact. The F&D industry has played an active role in packaging source reduction, while at the same time ensuring that product protection is not compromised.

Innovative developments in new packages and packaging materials have enabled the use of lighter weight and less energy-intensive packaging. Recycling has been significantly increased through the establishment of systems for the collection, sorting, recovery and recycling of packaging, in which the F&D industry has also been actively involved.

The F&D industry has made significant contributions to society at large. Food has become more available, yet there remain vast amounts of the world population with inadequate access to food, a challenge to be met by all actors.

The F&D industry has taken, and will continue to take, all necessary measures to ensure a high level of safety for its products. To ensure constant safety, measures such as hazard analysis critical control point (HACCP) and good manufacturing/good hygiene practices have been applied. Industry has shared its experience and expertise in the elaboration and revision of international, regional and national food regulations. Through research and development (R&D) initiatives, technological solutions have been identified and developed that have led to improvements in nutrition and food safety, quality and environmental aspects.

Industry has long recognised that business performance and the development of its employees go hand-in-hand. To this end, companies have put in place internal human resource policies and programmes that focus on employee rights, occupational health, safety and well-being, education and training.

F&D companies also view investments in local communities as imperative for business success. Supporting the development and quality of life of communities forms a key part of the F&D industry's social commitment. Numerous examples of community investment activities are provided in the report.

The F&D industry has also sponsored numerous consumer information campaigns and training programmes on such topics as the environment, food safety, nutrition and health. Voluntary initiatives and codes of conduct have been set in place that go beyond applicable legal obligations, for example, for labelling, negotiated agreements with governments and partnership programmes with the United Nations.

Improvements in economic, environmental and social aspects have been possible over the past ten years through the implementation of systems for environment and quality management, through initiatives on employee/community development, and through establishment of synergies with other stakeholders in the food supply chain: farmers, suppliers, investors and shareholders, F&D companies, distribution channels and NGOs. Some F&D companies and associations have

reported their accomplishments in performance reports, as well as in overall sustainability reports. F&D industry achievements in sustainability have been recognised via numerous awards, certificates and public commendations.

Despite tremendous progress in the 'Rio decade' there remain important global and local challenges. These challenges must be met head-on through co-operative efforts of all stakeholders at all levels, and the F&D industry is committed to being an active participant in meeting these challenges.

Of primary importance is ensuring the quality, safety and availability of food, especially in developing countries where there is a real need to produce sufficient quantities of good quality and safe food. Emerging technologies can help to address this challenge, when applied at the farm level and in food processing. The F&D industry recognises the necessity to develop and extend current initiatives to improve resource management, especially with regard to water management, energy and biodiversity.

Finally, developing and improving communication is a major challenge for the F&D industry. This can be achieved through the development of information tools such as performance indicators and sustainability reporting, and increased stakeholder dialogue, particularly with consumers. Co-ordination within the F&D industry is also essential in order to ensure a presence at the international level and to bring on board small and medium-sized enterprises (SMEs).

Part 1: The three dimensions of sustainable development

1 Economic dimension

1.1 Diversity of the food and drink industry

There is no all-encompassing definition of the F&D industry, as the wide-ranging and diverse nature of the sector defies attempts to set boundaries that would apply on a global basis. However, in general the F&D industry is defined principally by its role as secondary or final processors of agricultural raw materials into F&D products. This is illustrated by the fact that the F&D industry is responsible for processing 70% of agricultural raw materials in the European Union.

Typically, the industry is not vertically integrated, that is, F&D companies are not involved in the production of raw materials or retailing. However, due to the diversity of the sector there are plenty of exceptions.

The F&D industry is widespread across the globe and as a result reflects the richness and diversity of its markets. These markets vary in terms of agricultural raw materials, food consumption patterns, size, culture and tradition, factors which are mirrored both in the industry's products and composition. The industry differs in terms of its:

- structure – from small and medium-sized enterprises (SMEs), often family-owned, to major multi-nationals;
- scope – from companies that deal mainly with one or two food products, to those that produce a huge variety of different F&D products;
- activities – from primary processing of raw materials to the final production, packaging and distribution of F&D products.

There are four major product families: (i) products from animal origin for example milk, meat, fish, (ii) primary processing – vegetal such as oils, cereals, sugar, (iii) intermediary products such as starch, yeast, (iv) secondary processing – liquid as in alcoholic and soft drinks, secondary processing – solid for example pasta, chocolate, coffee, tea, processed vegetable, fruit, meat dishes etc.

1.2 Effect of the food and drink industry on local/national economies

The F&D manufacturing industry is one of the largest industrial sectors and as a result makes a major contribution to local, national and regional economies throughout the world. The following sections will cover production value, turnover, growth, the role of the F&D industry as an employer, and the composition and structure of the F&D industry. Throughout the world, it is estimated that the population spends about USD4,000 billion on food [Rabobank, 1999].

1.2.1 Production value, turnover, growth of the food and drink sector

Over the last ten years the global F&D industry has experienced steady and healthy economic growth, representing a market which is both stable and highly competitive.

Table 2: Food and drink industry production value by country		
Country	**Production*** **	**Importance of the F&D industry for example % of GDP, value added**
	USD billion	
Europe		
Central and eastern Europe**	34.7	
EU15	514	Value added = USD114 billion. F&D industry generates 14% of manufacturing GDP.
Switzerland	13.1	Fourth most important industrial sector with 8% of the total value of industrial production.
North America		
Canada	23	Food industry is the third largest manufacturing sector, generates 13.4% of manufacturing GDP and has a value added of USD12.37 billion.
United States	484	During the period from 1990 to 1998, the industry's GDP grew by 26%. The food processing industry currently makes up around 10% of the nation's manufacturing sector. In 1997, F&D shipments (domestic and international) represented the second largest value of all manufactured shipments in the United States economy.
South America		
Argentina*	26	
Brazil	50.9	The food industry is the second largest sector of the economy after the petroleum industry. Sector revenue in 1999 generated 9.8% of GDP.
Chile		The F&D industry contributes to 3% of the GDP and 20% of the whole manufacturing sector, which in its turn amounts to 15% of the GDP. In 1998, the food industry achieved an added value of USD6.3 billion
Colombia	8	F&D industry represents 30% of national industrial production.
Asia		
China	72	Food enterprises account for 12% of China's industrial enterprises. Annual turnover of RMB595.89 billion, is comprised of food-processing enterprises (RMB321.12 billion); food-manufacturing (RMB118.37 billion); and beverage-manufacturing (RMB156.32 billion).

Country	Production***	Importance of the F&D industry eg % of GDP, Value added
	USD billion	
India*	36.1	The food processing industry is the fifth-largest industry sector with a turnover of USD36.1billion, of which USD27.8 billion is from primary processing. The sector accounts for 14% of total industrial output and contributes 18% to GDP.
Japan	294.6	Food processing industry constitutes about 10% of total manufacturing industry in Japan.
The Philippines*	8.6	The F&D industry contributes 45% of gross value added in domestic manufacturing sector and the beverage industry alone has a value added of USD570 million.
Australia		
Australia	24.7	The F&D industry is the country's largest manufacturing sector, representing 18.1% of manufacturing output, and 2.4% of GDP.
Africa		
South Africa		Annual turn-over of USD0.5 billion

* food industry only (excludes beverage industry)
** Covers: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Poland and Slovenia
*** Central Europe = annual production value 1999
EU = annual production value 1999
Canada = gross output 1999
United States = Value of F&D shipments (domestic and international) in 1997 - source United States Census
Argentina = total output value
Brazil = food industry revenue 1999
Colombia = annual turnover 1999
China = annual turnover 1999
Japan = food manufacturing industry shipments, 1999
Philippines = annual turnover 2000
Australia = annual turnover 1998/99

1.2.2 Role of the food and drink industry as an employer

The F&D industry is one of the largest employers worldwide. In Australia for example, the F&D industry is accredited with much of the job growth in regional areas and employs about one in five of the manufacturing workforce. The F&D industry also has an important employment multiplier effect. For example, it is estimated that each job in the European soft drink sector generates up to an additional ten jobs (with suppliers, retailers, etc.).

Table 3: Number of food and drink industry employees		
Country	**Employees x 1,000**	**F&D industry as % of total employment**
Europe		
Central European countries*	945	
EU15**	2,548	11
Switzerland	61	1.6% of total employment; 6% of employment in industry.
North America		
Canada	378	
United States	1,600	United States food manufacturers represent 2% employment of all private industry and 9% of the total manufacturing sector. In 1997, annual payroll = USD43 billion.
South America		
Brazil	800	The food industry represents 19,6% employment of all industry.
Colombia	111	The F&D industry represents 21% of employment in the manufacturing sector. It directly employs 111,000 people and indirectly employs several times this figure.
Asia		
China	3,840	
India	1,600	19
Japan	1,429	
Philippines	1,350	Comprises 4.4% of total workforce, and 50% of employment in the manufacturing sector.
Australia		
Australia	174	In 1998/1999 the processed F&D industry employed 16.3% of the manufacturing workforce, and the agri-food industry as a whole accounted for 6.9% of national employment.
Africa		
Nigeria	30.9	
South Africa	216	Comprises 2% of the economically active population.

* Covers: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Poland and Slovenia
Central Europe = 1999 estimates sourced from CEC federations

** EU15 = 1999 estimates based on Eurostat figures
United States = 1997 figures sourced from United States Census
Japan = 1999
Nigeria = Employment in F&D industry in 2000, source AFBTE

1.2.3 Composition and structure of the food and drink industry

A common feature of the F&D industry in almost all countries is the diversified nature of the sector, with a high proportion of SMEs. For example, in the European Union 92.4% of F&D companies were SMEs in 1992, although larger companies with over 100 employees contributed 70% of the sector's turnover.

However, over the past ten years there has been a trend towards increasing consolidation with a steady rise in the number of large firms in many countries. The world's top 30 F&D companies are jointly responsible for food sales of USD373 billion. There are 14 companies with food sales of more than USD10 billion [Rabobank, 1999].

Table 4: Number of food and drink companies

Country	Number of companies	Comments
Europe		
Central European countries**	26,654	
EU15	25,746	In 1992, SMEs comprised 92.4% of F&D companies in Europe, while larger companies with over 100 employees contributed 70% of the sector's turnover. The trend towards increasing consolidation over the past ten years is likely to continue.
Switzerland	400	Only 8% over 500 employees; 56% between 50 and 500 and 36% less than 50 employees.
North America		
Canada	2,800	F&D sector includes 67 large and very large firms with annual sales over $100 million, representing about 60% of total sector shipments.
United States	28,985	
South America		
Argentina*	21,500	
Brazil	45,000	90.4% of companies have less than 19 employees and 20,926 companies have less then four employees. The top ten food processing companies' revenues represent approximately 10% of the total market.
Colombia	1,500	
Asia		
China	19,773	Of the 19,773 F&D enterprises recorded in 1999, there were 11,231 food processors, 4,963 food manufacturers and 3,579 beverage producers.
Japan	65,212	F&D industry is comprised of a large number of SMEs compared to other sectors.
The Philippines	1,245	1,165 registered food processing companies 80 registered beverage manufacturers

Table 4: Number of food and drink companies		
Country	Number of companies	Comments
Australia		
Australia	4,000	Rationalisation and consolidation are likely to continue, particularly amongst category leaders. At present the 20 largest food processing companies account for almost 50% of total industry turnover. For individual product categories, it is common for the one or two largest suppliers to own or share over 50% of the market.
Africa		
Nigeria	60	
South Africa	1,800	Dominated by top ten companies which are responsible for 68% of the industry turnover

* food industry only (figure for beverage industry unavailable)
** Covers: Czech Republic, Estonia, Hungary, Latvia, Poland and Slovenia
Central Europe = 1999 estimates sourced from CEC federations
EU15 = 1999 estimates based on Eurostat figures
United States = 1997 figures sourced from United States Census
Japan = F&D establishments (not companies), 1999
Nigeria = 1999 figures from AFBTE

1.3 Interface with other sectors

The F&D industry contributes significantly to the economic growth of many other sectors, most notably agriculture. For example, in the European Union (EU) the F&D sector purchases over 70% of EU's agricultural produce, while in Canada 40% of agricultural production is exported in raw form, 15% is either sold directly to consumers or sold for non-food uses and 45% is marketed as processed food through the F&D industry.

Further up the supply chain, F&D manufacturing requires the purchase of energy and huge investments are made to buy equipment, technology and new products. The F&D sector is also a major customer for the packaging industry and transport services, and invests in transport infrastructure, networks and vehicles. At the end of the supply chain, the F&D sector is one of the largest spenders on advertising and plays an important role in supplying the retail industry.

1.4 Impact on trade

World trade in agri-food products continues to expand, with total global exports increasing from USD250 billion in 1988 to USD442 billion in 2000. During this time, processed food's share of the agri-food trade has also grown. For example, F&D industry exports now represent (in value terms) 79% of EU global agricultural and food product exports.

Table 5: Food and drink exports by region		
Country	F&D exports USD billion	Comments
Europe		
EU15	42	EU F&D companies have seen exports almost double in the last ten years. In 1999, exports amounted to 37 billion, which in value terms represents 79% of global exports.
Switzerland	1.7	Approximately 80% to the EU; steady increase.
North America		
Canada**	8.5	Exports of processed food products have increased from $3.5 billion in 1988 to $8.5 billion in1996. This translates into processed food share of about 44% of total Canadian agriculture and agri-food exports.
United States	53.5	During the period from 1990 to 1999, the United States food industry increased the dollar value of exported food products by 56% while all United States industries combined increased exports by 72%. A recent estimate by the United States Department of Agriculture forecasts that United States agricultural exports will be USD53.5 billion in 2001, rising to USD57 billion in 2002.
South America		
Argentina		The domestic market dominates at present, but there is a strong and growing emphasis on exports.
Brazil*	7.7	The food sector focuses mainly on the domestic market, which takes 80% of production.
Colombia*	0.8	In 2000, the F&D sector exported processed foods to over 120 countries, with a value of USD823 million.
Asia		
China		In 1999 the China National Cereals, Oils and Foodstuffs Import and Export Corporation exported USD1,172.87 million, making it the third-largest exporter in China.
India		Major exporter of tea (exports over 20%) and coffee (exports over 70%). However, exports of processed food products are relatively low due to a lack of processing and transportation facilities which are currently being addressed.

Table 5: Food and drink exports by region (continued)		
Country	**F&D exports USD billion**	**Comments**
Indonesia*	5.5	
Japan	2	
The Philippines**	1.3	Represents 3.5% of total exports for 2000.
Australia		
Australia**	8.96	Food exports represented 16% of total exports of goods and services in 1998/1999.
Africa		
South Africa	0.49	

* processed foods only excludes beverages
** includes both fresh and processed foods but excludes beverages
Central Europe = 1999 estimates sourced from CEC federations
EU15 = 1999 Eurostat figures
Japan = 1999

As the figures show, over the last ten years the F&D industry has had a very positive impact on the economy and contributed to regional and national development all over the world. The key market drivers in the food-processing sector are:

- strong investments, for example in new processing facilities, equipment, technology and new product lines;
- strong export-oriented focus;
- better production technology, access to distribution channels, brand positioning and automated physical distribution will be key factors in the near future;
- growing production of more sophisticated food products (frozen, ready-to-eat) to meet a strong demand and that adapt its production to the various market trends;
- expansion of speciality products such as organic, aseptic and so-called functional foods.

2 Environmental dimension

2.1 Environmental policies and legislation

The F&D industry takes its environmental impacts seriously. Compliance with legislation is a minimum standard and the industry in general has a long history of taking voluntary and pro-active action to minimise its environmental effects. In many cases the industry has pioneered self-responsibility, preceding and/or complementing legislation.

Over the past ten to 15 years many companies within the F&D industry have developed and implemented corporate environmental policies. Surveys by national F&D associations show this. For example, in the United Kingdom and Australia, about 70% of members have environmental policies.

- The Australian Food and Grocery Council (AFGC) adopted a proactive environmental policy and management strategy in 1999. Member companies are encouraged to adopt the strategy in their own businesses through a comprehensive Environment Tool Kit and a series of member briefings [AFGC, 2000].
- In the Philippines the food and beverage industry is very active in the Philippine Business for the Environment (PBE). PBE has been implementing the Private Sector participation in Managing the Environment (PRIME) Project, an effort in encouraging

the industry to adopt and implement sound environmental policies, through the sponsorship and funding by the United Nations Development Programme.

Environmental legislation and regulations have grown increasingly complex and often segmented over the past ten years. Recent trends in regulation have been taking more of an integrated approach. During this process the F&D industry has been supporting legislation which defines objectives and leaves means of implementation to operators, thus allowing a higher degree of compliance and the potential for more innovative and sustainable results.

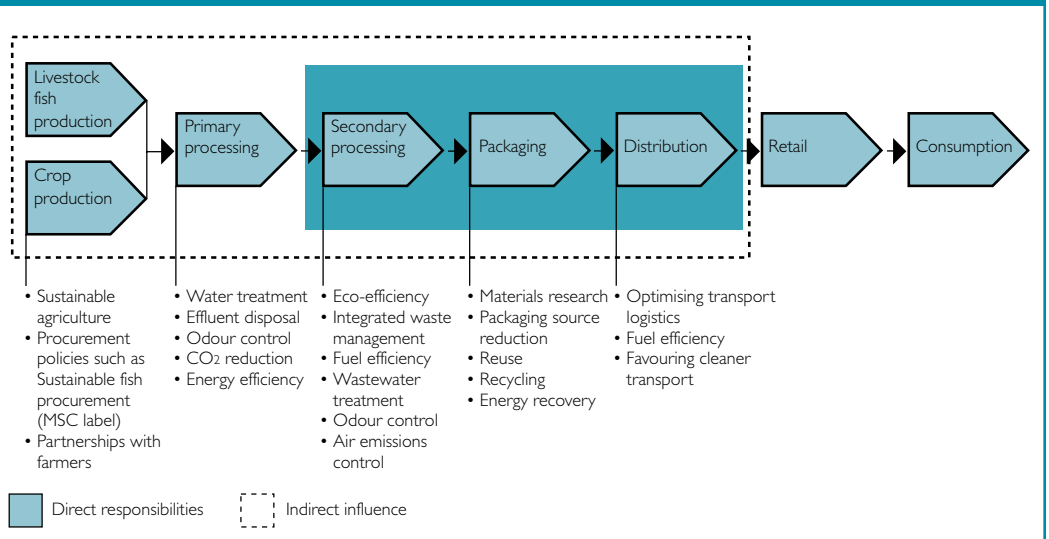
Additionally, regulations have often combined mandated requirements with enforcement and compliance tools. In many respects, the balance between enforcement and compliance has swung toward 'compliance assistance' in order to facilitate prevention.

Industry associations play an important role: participating in shaping legislation to ensure that it is efficient and effective, informing members of forthcoming legislation to facilitate early compliance and also increasingly in negotiating voluntary agreements and covenants and providing a forum to share and disseminate best practice.

2.2 Environment in the food supply chain

The F&D industry has addressed environmental considerations throughout the food supply chain, which starts with the production, purchase and processing of raw materials, continues through manufacturing, packaging and distribution and ends with the consumer. Actions taken by the F&D industry include support for sustainable agriculture, the adoption of cleaner production practices, the minimisation of packaging waste and optimisation of transport (see figure 1). The following sections address each of these issues in more detail. Despite significant efforts and success the F&D industry recognises that there remains a lot to be done to ensure sustainability, as described in part 3 of this report.

Figure 1: Food and drink industry responses to environmental impacts in the food supply chain



Adapted from UNEP, 1999

2.2.1 Raw materials

A key objective for the F&D industry is to provide safe and high quality products. To meet this objective, the industry recognises that the production of raw materials depends on a safe and protected environment. Although F&D companies are generally not involved in the production of raw materials, they have influenced their suppliers to promote sustainable agricultural practices.

The F&D industry describes sustainable agriculture as agriculture that is productive, competitive and efficient, while at the same time protecting and improving the natural environment and economic conditions of local communities. As the examples from selected raw materials in this section will illustrate, many sectors of the F&D industry have taken steps to encourage the uptake and implementation of sustainable agriculture practices.

Cereals

Cereals are the principal source of food supplies in the world, accounting for about half of daily calorie intakes. Global production of cereals is projected to increase by almost 1 billion tonnes by 2030, from the current level of 1.84 billion tonnes (half of this amount is for human consumption). About 560 million tonnes (mt) of rice are grown annually compared with 600 mt for wheat, 300 mt for oil seeds and 900 mt for coarse grains.

Developing countries are becoming increasingly dependent on cereals resulting in intensified crop production and increased imports from developed regions such as North America, Western Europe and Australia. Intensified crop production can have negative implications for the environment, which the F&D industry is working to address.

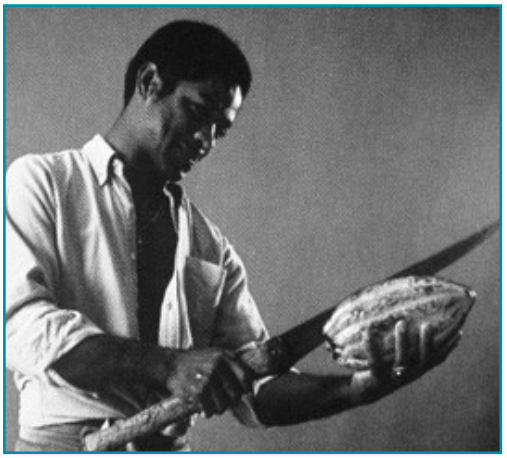
The first steps in environmental protection are the achievements realised in the field of sustainable agricultural and integrated farming.

Some examples include:

- the cereal processing industry has participated in programmes of seed selection, aiming at increased cereal productivity and an improved processing performance;
- the French federation of wheat and maize producers is organising awareness campaigns for farmers that aim to reduce inorganic fertiliser and pesticide use;
- the introduction of organic cultivation practices for rice (Europe, United States, Far East), the optimisation of the irrigation practices, avoiding further degradation of the soil by salinity (Spain), the development of rice varieties with higher yield potential and shorter growing cycle, increasing the returns on the input.

Cocoa

Cocoa beans are the primary raw material from which all cocoa products are derived and, as such, a major raw material for the chocolate and beverage industries. Grown in 13 countries within the equatorial regions of Central and South America, Africa and south-east Asia, the 2000 harvest yielded 3 mt of cocoa beans, representing an economic value of approximately USD3.3 billion.



Cocoa growing, which is carried out primarily by small-scale farmers in developing countries, represents challenges related to trading

systems, pest and disease control, pesticide use, income security for farmers and labour issues.

Agricultural and social programmes are making, or have the potential to make, significant improvements to crop quality and economic/social conditions. The following represent a few of the many initiatives in which industry is involved:

- assistance to farmers and equitable pricing: Sustainable Tree Crops Programme, supported by public-private partnership with USAID has increased productivity and income, instituted environmental protection measures and provided long-term economic incentives to farmers in West Africa;
- pest and disease management:
  - The Cocoa Pod Borer Management Project, supported by ASKINDO (Indonesia), ACRI (United States) and BCCCA (United Kingdom), has demonstrated four-fold yield increases through the use of pruning and complete, frequent, regular harvesting (CFRH) farming techniques;
  - in Ghana, the CRIG project is focused on development of an integrated pest management (IPM) strategy for control of cocoa stem borer;
  - CAOBISCO (EU) supported project involves researchers in France, Trinidad, the Ivory Coast and Cameroon in development of cocoa varieties resistant to black pod disease;
- child labour: The global chocolate industry, with support from governmental and non-governmental organisations and the International Labour Office, has undertaken a major initiative to address alleged child labour abuses in West African cocoa-growing regions.

In the future, the sustainability of cocoa production, including improved social conditions, will depend to a great extent on effective trading systems, ongoing research initiatives and greater availability of extension programmes that increase farmers' agronomic knowledge and provide information on good farming practices, such as IPM.

Coffee

Coffee is grown in about 50 countries, mainly developing countries, many of whom rely heavily on earnings from coffee. Direct employment is estimated at 25 million people and indirect as high as 100 million. Even at the low prices of 2001, the annual production of 7 mt still represents about USD9 billion.

Sustainability concerns related to coffee growing include the potential for nutrient depletion and erosion of soil, water use for processing the crop, the use of pesticides and fertilisers, reduction of biodiversity, destruction of natural forests, and equitable pricing. To address these concerns the F&D industry is actively involved in initiatives for sustainable coffee growing. Some examples include:

- ecosystem and wildlife conservation: Colombia developed a Forestry Action Plan to establish and maintain 390,000 hectares of woodland at medium and high altitude in coffee areas;
- soil conservation: In the Philippines, Nestlé worked together with the Ministry of Agriculture to promote the use of 'contour planting' or SALT (sloping agricultural land technology), resulting in up to 90% reduced soil erosion, improved soil fertility and crop yields while allowing simultaneous cultivation of other crops [Nestlé, 2001a];
- pest and disease management: The F&D industry has formulated an IPM approach to minimise the use of pesticides. Using wasps and other control agents has proven successful in combating the coffee berry borer;
- assistance to farmers and equitable pricing: The F&D industry worked with FAO to develop guidelines on good agricultural practices for coffee. In recent years, in producing countries such as the Ivory

Coast, Mexico, Thailand, the Philippines, and China, Nestlé has begun to buy a part of its supplies directly from coffee growers. In this way, the supply of high quality coffee for processing is ensured while, through the elimination of many trade levels, farmers improve their incomes [Nestlé, 2000].
- certification: Daterra coffee farm in Brazil has been certified to ISO 14001;
- water conservation: Before green coffee beans are sold, the outer layer of the coffee cherry has to be removed. One way of doing this, the so-called 'wet processing', requires large amounts of water, in the region of 100 to 150 litres per kg of green coffee. In Brazil, Colombia and Costa Rica new methods and equipment have been developed that reduce water consumption to 5 to 10 l/kg, while reducing production of wastewater. Use and implementation has been gradual due to the significant equipment cost.

Coffee will continue to be a significant source of income in many developing nations. The F&D industry is working to expand sustainable agriculture techniques in coffee growing to support development of this important source of revenue while ensuring the local environments are protected.

Fish

Fish is an extremely important food source. About one billion people worldwide, the great majority of them in developing countries, rely on fish for their primary source of protein [Matthews, 1999]. However, fisheries experts have been warning for many years that catch rates are exceeding the maximum sustainable yield. Global production from the fishery sector increased by just over 70% between 1980 and 1998, reaching 127mt in 1998. As a result, an estimated 50% of world fish stocks are fully exploited, 15% are over-fished, 7% are depleted and 2% are recovering from over-fishing [FAO, 2000, in OECD Environmental Outlook, 2001]. The security of fish supplies in the coming decades is a key sustainability issue, particularly in the context of a world population expected to rise to nine billion people.

- Canada's fisheries management system is among the most sophisticated and complex in the world. The fishing industry shares with the government a commitment to responsible fishing and sustainable fishery. This commitment has led to a growing financial contribution to science by the fishing industry and shared decision-making in resource protection and management programmes.

Some F&D companies are large users of fish and have an important role to play in encouraging their sustainable harvest, not least to ensure the security of their own supplies. Many companies have set targets for purchasing fish from sources which are sustainable and which use techniques that avoid causing harm to non-target species such as dolphins.

- Unilever, an important buyer of white fish, has set an objective of purchasing all of its fish from sustainable sources by 2005. A key tool in achieving this commitment is the Marine Stewardship Council (MSC). Originally initiated by Unilever in partnership with WWF, but now an independent organisation, the MSC certification scheme provides procurers with a chain of custody guarantee that fish are from sustainably managed sources. Unilever currently purchases MSC certified white fish from New Zealand and one of their brand, Filegro, has also been certified. In addition, 90% of their suppliers have signed a sustainable fishing code developed by the German fish industry [Unilever, 2001].

Fruit and vegetables

A great diversity of fruit and vegetables are grown all over the world. FAO studies show that in 2000, the annual global trade of fruits and vegetables exceeded USD40 billion and

world production reached approximately one billion tonnes [FAOSTAT, 2001]. The production of fruit and vegetables must be well-managed to enhance agri-biodiversity and increase soil fertility and stability. Poor environmental management such as excessive use of fungicides and non-selective insecticides on crops can result in the destruction of beneficial insects, pesticide resistance, pest resurgence, and soil and water pollution. The F&D industry has encouraged its suppliers to use pesticides in a selective and targeted manner and to adopt best practice techniques such as integrated pest management (IPM), as the following examples illustrate.

- a major fruit and vegetable processor in the United States began a groundbreaking pesticide control programme in 1953. The processor sources raw products from 3,000 growers, tightly controls all pesticide applications made to over 160,000 acres of fruit and vegetables. Since the mid-1970s the company has focused on IPM programmes;
- in 1998, a Unilever company, Birds Eye Walls, began a sustainable agriculture project for its pea growers in the United Kingdom. Sustainability standards and ten sustainable agriculture indicators were developed to monitor progress. The programme involves ongoing research and monitoring which this year include the benefits of field margins around pea fields, new selective weeding programmes and greater use of biological controls;
- the United Kingdom Association of Cider Makers (NACM) has developed an IPM strategy and modelling system, based on the limited use of selected insecticides to control major pests with minimal impact on beneficial insects. Two major cider companies, Bulmers and Matthew Clark, now run competitions among their contract growers for the orchard which most effectively combines high commercial standards of fruit production, with sensitive environmental management [UK FDF, 2001].

Milk

Milk, an extremely important food source for mankind, is produced and consumed in different forms in many countries throughout the world. Milk is processed into butter, cheese, milk powders and other products to improve stability and allow wide distribution. Total worldwide milk production for human consumption was 487 mt in 2000, 85% of which was cows' milk and 15% other milk. The turnover of the top 20 dairy companies represented USD100 billion in 2000 [IDF, 2001].

Sustainability concerns related to milk production include raw milk quality, good animal husbandry, pesticide use, manure management, transport distances and wastewater. The F&D industry has been active in promoting continuous improvement in these areas, and several examples are presented below.

Many processors have implemented milk quality improvement initiatives. Guidelines and direct assistance are provided to farmers on all aspects of sustainability throughout the milk supply chain including advice on quality, overall farm management, appropriate use of pesticides, good animal husbandry such as controlled breeding practices, and manure management techniques to prevent ground water contamination. The F&D industry has been largely responsible for greatly improved milk districts in many developing regions.

- For example, in China, Nestlé has had a history of involvement in developing milk production dating back to 1987. To ensure sufficient milk supplies, Nestlé worked in co-operation with the provincial government to stimulate milk production in the area. Initiatives included programmes for improved breeding, better milk prices for farmers, better road systems between the farms and the milk factory, and improvements in livestock feed [Nestlé, 1992]. In a joint study between Swiss and

Chinese official experts, the effects of these sourcing activities have been evaluated by taking 12 sustainability evaluation criteria. The study measures past activities, but also considers how to strengthen future sustainable development.

- Through partnerships with farmers, Danone's activities in Russia are aiming to double current milk production rates and improve protein content by 10% to 20%. This will be done through a variety of methods including development of lower cost, more suitable forage and training of farmers. Other improvement initiatives include introduction of new milking methods and assistance in providing new cooling tanks meeting higher standards. In addition, Danone assesses all 12,000 of its European milk suppliers against a checklist of 25 criteria such as hygiene, milk quality and environmental aspects.

Milk will continue to be an important source of revenue and nutrition throughout the world with milk production expected to grow at about the same 0.8% average as over the last ten years [IDF, 2001]. The F&D industry is working to expand sustainable agriculture techniques, continually improve milk collection systems and at the same time help farmers increase production per head and thus revenue.

Oils and fats

In 2000, the global consumption of oils and fats was 116.4 mt [Oil World Annual, 2000]. The largest volumes were for soybean oil (26.4 mt), palm oil (22.8 mt), rape seed oil (14.5 mt) and sunflower oil (9.4 mt). Total volume growth in 2000 was 4.3 %. Oil crops play an important socio-economic role in growing regions. For example, in Malaysia the palm oil industry accounts for 5.6% of Gross Domestic Product (GDP) and is an important provider of employment in rural areas [Singh, 1999].

Since much of the growth of palm oil and soybean occurs in regions with tropical rain forest (south-east Asia, West Africa and Latin America), the conversion of rain forest to agricultural land is a key sustainability issue. The F&D industry has begun to work in partnership with suppliers to address this issue.

- For example, Unilever (which annually purchases 1 mt of palm oil) has begun sustainable agriculture initiatives on its own plantations in Malaysia and Ghana, and plans to work with the wider palm oil industry to try and address this issue.

Sugar

Sugar is extracted from sugar beet and sugar cane. In Europe, where beets are the main source of raw material, 18.1 mt of white sugar were produced in 1999/2000 [CEFS, 2000].

To ensure sustainable agricultural practices, specific guidelines were introduced and are followed by European beet growers. These were initiated and are supported by the sugar industry.

The sugar industry also plays an important role in research. Plant breeding measures have improved both beet quality and disease resistance. Being involved in each step of the cultivation of the raw material, the beet processors are continually working to expand the use of best agricultural techniques.

- British Sugar invests over £2 million a year on crop research including work on reducing agrochemical use. It has advised beet growers on matching fertilizer applications with crop requirements, resulting in application reductions of 33% over the last 20 years.

- In Scandinavia, Danisco Sugar began a 'Clean Beats' project in 1990 to reduce soil loss during harvesting. A combination of technical, economic, and plant breeding measures has resulted in reductions in soil loss of 150,000 tonnes, 50% below 1990 levels,

- For more than 50 years now Südzucker has initiated a field trials programme to develop sustainable practices. These practices have not only led to several important environmental results (e.g. 50% reduction of nitrogen-fertilizer and plant protection agents in the last 25 years) but have become part of good agricultural practice.

Tea

World tea production has grown continually over the last ten years and reached 3 mt in 2000. Tea consumption is forecasted to continue its significant increase, with the highest growth potential in developing countries such as Pakistan, North Africa and Middle East countries [FAOSTAT database].

- Unilever, the world's largest supplier of black leaf tea, owns tea plantations in India and East Africa where, in 1999, it initiated two pilot projects to research sustainable agriculture techniques. Under the Brooke Bond Kenya project, no pesticides are used on the crop and consumed energy is mainly produced from the estates own hydro-schemes. Similar measures are to be applied as well in India where reducing pesticide use, increasing renewable energy sources and reducing nutrient levels without affecting yields remain the main challenges.

  Both projects aim to determine parameters applicable to the ten sustainable indicators developed by Unilever, namely: soil fertility/health, soil loss, nutrients, pest management, biodiversity, product value, energy, water, social/human capital, local economy. Future guidelines based on these project findings will be adopted throughout Unilever plantations, shared with other tea suppliers and offered as examples of best practice to the industry in general.

As shown above, there has already been significant progress in improving sustainability in the production of raw materials. The long-term objective of the F&D industry is to encourage further progress, so that sustainable agriculture becomes increasingly systematic and globally widespread. The F&D industry will seek to achieve this objective through the provision of partnerships and assistance, and by consensus building with all stakeholders in the food chain.

2.2.2 Water

Water is essential for life. The world's population withdraws approximately 4,000 cubic kilometres of fresh water annually. Of this amount, 69% is used for agriculture, 23% by industry and 8% for domestic purposes [OECD, 2001]. The F&D industry uses water for beer (0.03%), soft drinks (0.01%) and bottled water (0.004%).

The F&D industry supports the sustainable use of water and helps ensure the efficient use of this vital resource. Water is required for most manufacturing processes and is used by consumers in the preparation of their daily food dishes. Water is the key ingredient for the manufacturing and bottling of liquid beverages such as beer, soft drinks and bottled waters. The environmental impacts of these uses vary, as described in the following sections.

Some companies have already elaborated corporate water policies that state their commitment to the responsible use of the world's water resources.

Water in agriculture

Agriculture is, by far, the largest user of world water resources. Water availability and salinity problems represent major challenges for the sustainability of the agri-food sector. Although most F&D manufacturers are not involved in the production of agricultural raw materials, some have participated in efforts to promote sustainable agriculture and efficient water usage. This has been done both within their own operations, and also through partnerships with agricultural suppliers who have ultimate responsibility for water usage at this stage of the supply chain.

Examples of initiatives include the development of new plant varieties that require less water (an area where contributions from biotechnology can be of importance, as discussed later in this report), planting crops that consume less water, the application of good agricultural practices, timing of water utilisation, use of appropriate equipment and implementation of effective methods of irrigation.

Water in manufacturing

The F&D industry uses water in a variety of ways in its manufacturing processes, including washing, boiling, extraction and for reconstitution of dried raw materials. Water consumption varies greatly between sectors.

- As an example, the Australian F&D industry reports a range of water consumption from 3 l/kg of products for food in general, to 7 l/kg for dairy based foods and 33 l/kg for meat processing.

Industry has taken many proactive measures to reduce, reuse and recycle water resources and to ensure wastewater reduction and treatment. An analysis of the environmental performance indicators (EPIs) reported by some F&D companies and associations shows significant reductions in water consumption, wastewater generation and load).

- In the United States, food processing is one of the largest industrial users of potable water. A limited survey by the US food industry in the mid-1990s indicated that water use by individual facilities ranges from thousands to multi-millions of gallons per day. Increasingly, water conservation and reuse programmes are being implemented. Techniques used for conserving water include use of shutoff valves to eliminate non-critical water consumption, flow reduction devices and, where feasible, use of dry versus wet cleaning methods.

- Coca-Cola bottling operations typically use between two and five litres of water per litre product manufactured. As water conservation is one of its key policy areas, the Coca-Cola Company is developing a water conservation manual for all of its bottling operations worldwide. Bottling plants can select measures from this manual to improve water usage efficiency taking into account local conditions. Bottlers are also encouraged and supported to undertake a variety of local projects, such as awareness campaigns in local communities, co-operation with local NGOs to secure the future of wet land areas and multi-industry initiatives to optimise local water extraction, usage and wastewater disposal through sharing scenarios.

- As part of its water management programme, Heineken sets yearly targets for water used in production and wastewater discharge. This followed a worldwide brewery study that showed that water consumption varied between four and 20 hectolitres (hl) per hl of beer produced by breweries, with an average consumption of 7.3 hl. To improve eco-efficiency, a large number of breweries have adopted a voluntary target of less than 7 hl water per hl beer. Heineken has developed a tool to help breweries identify potential water reduction initiatives and the

investments that will be involved in achieving a reduction [Heineken 2000].

- Hindustan Lever, a Unilever subsidiary in India, has been trying to spread the message of better and sustainable utilisation of available natural resources, exemplified in its work at its Khamgaon factory in Maharashtra. Through a combination of soil conservation and water harvesting techniques, a once barren five hectare plot within the factory boundary has been transformed into a valuable repository of timber, fuel and fodder, by remarkably improving the quality of the soil. This has been achieved in combination with an annual conservation of approximately 8,000 cubic meters of water. Information on the methods applied has been summarised in a booklet to promote such conservation measures all over the country.

- The starch industry has realised substantial savings (up to 20%) in fresh water consumption during the latest 20 years, due to process integrated measures and internal recycling of process water. Cooling water systems have been optimised to reduce the cooling water requirements and the use of fresh water.

- In Chile, many parts of the F&D industry have installed in-house treatment plants for wastewater. For example, Nestlé has invested USD2 million in 1992 for activated sludge treatment, Gist Brocades Industrial SA (yeasts) invested USD5 million to treat aerobic and anaerobic waste and Agrosuper (pork processing) invested USD1 million in 'biodigestors' for the treatment of wastewater, which produces dual benefits in the production of biogas and water of sufficient quality for irrigation.

Bottled waters

Bottled waters include natural mineral waters, spring waters and specially formulated bottled waters. Taking care of the environment is a fundamental requirement for the bottled water sector. The industry applies a strong risk-prevention policy to its production sites and the areas around its water sources in order to protect the ecosystem. Tens or even hundreds of years are sometimes necessary for water to filter through the subsoil in a given area and reach a source.

Protecting this source means protecting the whole catchment area from any hazardous activity. The bottled water industry works with local communities that surround its water resources to ensure maximum protection of the ecosystem. The impacts of water-bottling activities are continuously monitored and master plans are developed and followed in order to prevent pollution of the sources and watertables.

R&D for water

The F&D industry has increasingly recognised that environmental concerns should be addressed in the research and development (R&D) stages of new products and processes. R&D efforts related to water use are vital in this pursuit.

- Facilities such as the Danone's Evian Water Centre and Nestlé's Perrier Vittel Institut de l'Eau, support sustainable water use through internal research programmes, as well as grants and awards for work by young scientists.

2.2.3 Manufacturing

Manufacturing is an important part of the supply chain. In the context of the F&D industry, manufacturing can be defined as the variety of processes by which raw materials are transformed into safe, convenient, high quality food and drink products.

As will be demonstrated in this section, the F&D industry has been committed for a number of years to pursuing continual improvements in eco-efficiency in

manufacturing – that is, to create more goods while using ever-less resources and producing less waste and pollution [WBCSD, 1992] or, simply put, to 'do more with less'.

Eco-efficiency measures have already been widely applied throughout business and notably in the F&D industry, where it has been recognised that what is good for the environment is also good for business. The industry continuously promotes eco-efficiency strategies that can help to move towards sustainable development, creating more value with less impact, through:

- the optimisation of processes (reduce resource use, impacts and operational costs);
- recovery of by-products;
- innovation in product packaging development (better design and functions for lower impact in use).

Although not yet general practice, many F&D companies and national associations have already produced environmental reports (see section 4.4 (page 47) for a selection of F&D reports). These reports show that a lot of work has taken place and a lot has been achieved in improving the environmental performance of manufacturing processes in the F&D industry. The performance of this part of the food supply chain falls entirely under the control of F&D companies and hence this is where the industry has the greatest ability to manage its environmental impacts.

Improvements in eco-efficiency often result in significant cost-savings, but can also require investments in capital, time and human resources.

- For example, in the United Kingdom, environmental spending by the F&D industry rose from £550 million in 1997 to £662 million in 1999, making it the biggest investor in environmental improvements. Meanwhile, Nestlé reports an average capital expenditure on environmental issues of Sfr100 million annually worldwide. The Belgian F&D industry invested, between 1995 and 1998, BEF 15 billion on environment out of which 46% were for 'end-of-pipe' solutions and 54% for prevention. The three primary areas of investment were water, air and waste.

The F&D industry recognises that in order to manage environmental performance, it must first be measured. A variety of tools and methods such as environmental audits and EPIs are used to establish a performance level against which future performance can be assessed and reported. EPIs from some F&D companies and associations are outlined in table 1 (page 8).

This analysis is limited by the diversity of activity within the industry and the fact that not everyone uses the same indicators or units. In some cases, measurement of EPIs has begun only recently. There are certain EPIs which form the basis of measurement in most cases and, as environmental reporting guidelines become increasingly standardised, comparability is likely to increase in the future.

The most commonly used EPIs are:

- water consumption,
- energy consumption,
- wastewater generation and COD,
- air emissions,
- waste generation and recycling rates.

The following sections show how the F&D industry has responded to environmental impacts from manufacturing operations.

Water

Most F&D companies have reported significant reductions in water consumption and wastewater generation and load. For further information on water please consult section 2.2.2 (page 25).

Energy

The most energy intensive activities in the F&D industry are those with significant heating, baking, cooking and freezing operations (bread, meat processing) followed by dairy related operations (refrigeration, drying, heating), and the preparation of cereals and dry foods products (heating and refrigeration).

The F&D industry strives to use energy in the most efficient way possible. Most F&D companies have reported significant reductions in energy consumption per unit production and in related air emissions over the past five years. These have been achieved by:

- switching from heavy fuel to natural gas as an energy source.
- improved energy management,
- introduction of co-generation,
- using certain agricultural by-products as a source of energy,
- equipment and process innovations.

The following examples show how the F&D industry has introduced successful energy efficiency initiatives.

- In the United States, in 1987, the top three sources of energy in order of total use were electricity, natural gas, and coal. In 1999, natural gas accounted for the greatest source of energy, representing over 56% of total energy use by the food industry. The growing use of natural gas, beginning in the late 1970s and continuing through 2000, represents a greater commitment to efficient energy use as well as a lowering of emissions associated with coal and petroleum-based fuels;
- In the Philippines, one of Nestlé's largest soluble coffee factories has been using spent coffee grounds as fuel, enabling a decrease in reliance on non-renewable fuels. This has resulted in savings of more than 4,000 tonnes of oil equivalents and reducing SOx emissions by nearly 300 tonnes. This integrated approach has been extended to other factories, saving about 800,000 tonnes per year of spent coffee grounds from landfilling [Nestlé, 2001a];
- Heineken is recovering and using biogas from wastewater treatment installations, as an additional fuel. This has successfully enabled the brewery to reduce its consumption of fossil fuels. One brewery in the Netherlands has obtained more than 4% of its total energy requirements from biogas reuse [Heineken, 2000];
- The AFGC has signed a 'greenhouse challenge facilitative agreement' with the Australian Greenhouse Office (AGO). The participating companies are required to undertake an energy audit of their operations, develop action plans to reduce greenhouse gas emissions and report to the AGO on progress [AFGC, 2001];
- Kraft Foods International has achieved significant reduction in energy consumption by generating electricity through their own combined heat and power plants. This co-generation technology makes use of the heat produced as a by-product of electricity generation to generate steam for the factory. The Banbury coffee and dessert plant has reduced its emission of CO_2 by 16,000 tonnes annually since using this technology.

Air emissions

Emissions from F&D manufacturing are very limited compared with other sectors. FEVIA notes that in Belgium the F&D industry accounts for only 6% of NOx, 9% of SO_2 and 1% of VOCs emissions of all industry. Main air emissions include CO_2, SOx, NOx,

particulates, VOCs, CO, ozone depleting substances and dust. Odour and noise are also of concern.

Emissions of many substances are closely linked to energy consumption as discussed above, and energy efficiency has been identified as a key means of mitigating the greenhouse effect. The use of ozone depleting substances has been greatly reduced using replacement technologies. Odour impact is reduced by appropriate absorption techniques such as scrubbers. Noise is reduced by measures such as acoustic insulation and silencers. Dust emissions are further reduced through the use of bag filters.

The F&D industry has invested heavily in reducing its emissions and physical impacts as demonstrated in the examples below.

- In order to control odour from rendering plants, the meat processing industry has been using biofilters, which work by directing odorous gases through a biological medium where the odorous compounds are removed by physical, chemical and biological processes. In New Zealand, for example, about half of all rendering plants make use of biofilters [Lynch, 1999].

F&D companies have also worked to phase-out the use of ozone depleting substances like CFCs, HCFCs and Halon which have been used for refrigeration and fire protection.

- Both Heineken and Nestlé have reported impressive reductions in table 1. One innovative solution applied by Nestlé consists of a combined system of natural refrigerants – ammonia and carbon dioxide. This avoids using substances with high global warming potential such as HFCs and reduces safety risks.

- Coca-Cola has adopted a comprehensive policy aimed at reducing the environmental impact of their cooling equipment over time. By the 2004 Olympic Games in Athens, they will no longer purchase new cold drink equipment using hydrofluorocarbons (HFCs), wherever cost-efficient alternatives are commercially available. Additionally, they will reduce the energy use of individual equipment by 40% to 50% by 2010.

By-products/waste

During the F&D production process, unwanted or unusable materials are generated along with the main product. Definitions vary, generally speaking, by-products can be used for another purpose while waste can not. Waste can also be produced during the cleaning of equipment or as scraps from packaging operations. The Belgian F&D industry has calculated that other materials generated during the F&D manufacturing process include 98% of recoverable materials compared with only 2% of wastes.

The waste EPIs typically used by the F&D industry measure the volume of by-products/waste (either at the point of generation or disposal), recycling rates and the volume of landfilled wastes.

- The AFGC has used the ratio of waste generation to product and the ratio between total waste and materials recycled and organic materials used in other applications. The average rate of waste to landfill in Australia as a proportion of product has been estimated at 1.7% that is 17 kilos of landfilled wastes for every tonne of product, with recycling rates ranging from 38% to 98% [AFGC, 2001].

F&D companies have introduced a number of measures to reduce waste generation from their operation, and increase recycling rates. Examples of such initiatives include:

- the discarded skins and husks of the coffee berry produced during the first stages of coffee production at farms can be used as

natural fertilizer or as fuel. Spent coffee grounds remaining after soluble coffee manufacturing can also be used for fuel or composting;

- a reduction (up to 20 %) in the use of processing aids such as limestone allows a substantial reduction in the volume of solid waste produced by the sugar beet manufacturing operations;
- Heineken has put in place different measures to recycle or reuse by-products and waste. For example, spent grains and trub are sold for use in animal feeds [Heineken, 2001];
- the starch industry recovers all raw material components as main and co-products. The total yield is close to 100%;
- some Japanese companies, such as Ajinomoto Co Ltd and Kirin Breweries Co Ltd, have set up policies aiming at zero-waste production. Disposal of organic waste is co-ordinated with farmers. The 2000 Japan Food Waste Recycling Law required all companies working throughout the food supply chain to use their organic wastes as compost or fodder. By 2006, all companies must reach a target of 20% organic wastes utilisation.

2.2.4 Packaging

Packaging plays a significant role in protecting F&D products, thus preventing product waste and helping to conserve food. Primary packaging serves to protect food and drink products from spoilage and tampering, to preserve product quality and to provide convenience and information to consumers (ingredients, nutrition, serving instructions, open dates).

Secondary and tertiary packaging, such as shrink wrap, pallets and crates also serve an essential purpose, protecting products during transport and facilitating more efficient distribution. The F&D industry has played a leading role in the last ten years in optimising packaging use through prevention, reuse and recovery.

Lack of good packaging is one of the main contributors to food spoilage in the developing world where, all too often, the food never reaches the people for whom it was produced. In some developing countries, food losses of 30% to 50% are reported. Better use of packaging in these countries has the potential to reduce famine and mal-nutrition. Effective packaging also facilitates trade, which in turn is a potential source of greater economic well-being in many of the world's more remote regions.

Progress in packaging source reduction

There has been an increased focus on packaging and its environmental impact over the past ten years. Environmental considerations have now become a systematic part of the packaging design. Innovative developments in new packages and packaging materials have allowed the use of lighter weight and less energy intensive packaging, while meeting the essential requirement of maintaining its functionality.

In 1992, the introduction of Polyethylene terephtalate (PET) revolutionised the bottled water industry and carbonated soft-drink industry. Today PET bottles have virtually replaced the old PVC bottles. Changing from 1.5 litre PVC to PET meant a significant 18% reduction in bottle weight. From 1996 to 2000, the weight of the new bottle was reduced by another17% thanks to new design

technologies. Overall, current 1.5 litre PET bottles now weigh 15g less than the original PVC ones. Similar reductions have been achieved for softdrink bottles where the weight of 1.5 litre bottles was reduced 18% from 1993 to 2000.

The amount of tinplate necessary to produce a beverage can, has been continuously reduced for many years. In 1970 the wall thickness of the can body was 0.32mm and in 2000 the average standard gauge is 0.24mm, contributing to a 30% reduction, with further reductions planned.

Innovation in packaging design must also take into account changing social structures, lifestyle choices and personal tastes. In Europe, surveys show an increased preference for single-serve packages and, in certain cases, a decline in the desire for 'soft-packs'. Addressing these preferences is part of meeting consumer expectations in a highly competitive market. These trends may result in an increase in packaging material use for some products in the future.

Promotion of packaging waste recovery

Packaging source reduction and recyclability are important, but alone, are not enough to ensure proper 'life cycle' management of packaging and packaging waste. Systems for collection, sorting, recovery and recycling also need to be set up. F&D companies recognise the necessity of taking part in packaging waste recovery. Considerable amounts of time, energy and money have been invested by the industry to develop efficient recovery schemes resulting in significant progress in many parts of the world.

In Europe, during the 1990s, F&D industries were key participants in the creation of national packaging waste recovery schemes and organisations that facilitate the collection and recovery of used packaging.

- these include, for example, DSD in Germany, Eco-Emballages in France, and others in Austria, Denmark, Belgium, Finland, the Netherlands, Norway, Spain, Italy, United Kingdom. These organisations have achieved very impressive results for packaging recycling: 50% in France, Denmark and Finland, 63% in the Netherlands and Norway, 77% in Belgium, 81% in Germany, 90% in Austria;
- in Canada, the National Packaging Protocol, to which the F&D industry sector committed itself in 1989, has set targets and schedules for waste minimisation, including a 50% reduction in waste generation by 2000. Statistics show this target was surpassed four years ahead of time in 1996, successfully diverting 51% of used packaging material from landfill;
- in the United States, recycling of food packaging materials has grown drastically. In 1999, 40% of all plastic bottles, 42% of all paper and 55% of all aluminium cans were recycled;
- in Japan, F&D industry has worked with the Packaging Container Recycle Association since 1996. High recycling ratios of 34.5% for PET bottles, 77.8% for glass bottles, 84.2% for steel containers and 80.6% for aluminium containers, were achieved in 2000.

However, recycling is not always the most sustainable option. Recent studies suggest that other waste management options such as incineration with energy recovery, composting or bio-degradation may make more sense in certain situations. The wide variation in local geographic and demographic conditions from region to region make it impossible to prescribe general means of packaging waste management. The F&D industry therefore supports an integrated waste management approach, that aims to prevent waste through resource conservation, and at the same time, limits the amount of waste to landfill.

2.2.5 Transport

Transport is a key link in the logistics chain aimed at optimal supply and distribution of goods to the consumer. Among the different

types of transport, road transport is the most commonly used mode in the fast-moving consumer goods sector. F&D manufacturers have notably improved their distribution efficiency especially with dual-temperature vehicles and new technologies.

- Under the ECR (efficient consumer response) Europe project, major European manufacturers and retailers have been working together since the mid-1990s to identify opportunities for transport improvement in Europe. A report published in 2000 recommends the promotion of best practices in:
  - consolidation of loads;
  - vehicle fill;
  - use of multi-modal transport to optimise distribution networks. In Germany, 46% of Kraft's raw materials are transported by rail, which replace about 4,300 long-distance and 7,200 local delivery trips and have saved 40% of the energy previously used.

Despite these important efforts, opportunities for progress still exist in this area. Improvements should focus on the infrastructure, both in the developing countries to support the efficient distribution of products and in key urban centres of industrialised countries to reduce traffic congestion. Vehicle weight and/or cube should also be optimised.

Reduction of the greenhouse gases (GHG) emissions generated from transportation activities on-site and off-site remains also essential (see future challenges – energy, page 55). However, it is clear that a move to promote consumption at nearest point of production as a means of reducing energy use through transport would have serious drawbacks in terms of higher food wastage through spoilage, especially for developing countries. These food losses could damage the local economies of countries that are great exporter of raw materials. It would also lead to a significant reduction in consumer choice.

Finding sustainable ways to optimise transport is a global issue that goes beyond the F&D industry. Concerted efforts with other stakeholders (retailers, transport service providers, etc) and incentives from public policies will be essential to realise this vision.

3 Social dimension

This section addresses the key social issues facing the F&D industry, from food safety to corporate social responsibility. In this field, the F&D industry cooperates closely with their consumers, their employees, the local communities and other stakeholders.

3.1 Meeting consumer needs

3.1.1 Food security

Access to a safe and adequate food supply- food security- is essential for the health and well being of people everywhere. Thanks to innovations and growth by the F&D industry, more people than ever before have access to safe, high quality food and beverage products.

Food security is integrally linked to available income. In developing countries, where incomes are generally low compared with those in developed countries, the percentage of people that are considered to be within the medium to high standard-of-living category has increased substantially over the past 35 years. Nevertheless, significant numbers of people around the world still do not have a secure food supply.

Although the F&D industry cannot solve the poverty issue, it does make an important contribution to the solution. In addition to providing access to safe, high quality food products, the F&D industry provides employment opportunities which, in turn, generate income, increase living standards and provide the buying power necessary to enable adequate dietary intakes. The F&D industry establishes local manufacturing operations, utilises locally-grown raw materials that are

purchased from farmers at a fair price and employs local distribution systems to bring products to local populations. Such initiatives are recognised by the World Trade Organisation (WTO) as essential for economic development.

3.1.2 Food safety

Ensuring product safety is a fundamental obligation for placing food and drink products on the market. Industry has taken, and will continue to take, all necessary measures to ensure a high level of safety for its products.

Manufacturing food and beverage products follows a chain that begins with the production and storage of raw materials and continues through processing, packaging, distribution and preparation or use by the consumer. Food-borne illnesses, development of contaminants during processing, introduction of foreign matter and product tampering represent just a few of the problems that can compromise the safety of food products. Industry has put in place a number of measures that, when applied as a comprehensive programme, ensure product safety all along the food production chain.

Safe raw materials are the basis for safe consumer products. However, the risk of unsafe raw materials has increased with the focus on low cost/high volume agricultural production methods. BSE, contaminants from fertilizers, antibiotics, mycotoxins and pesticide use represent just a few of the major challenges in recent years. The F&D industry ensures the safety of its raw materials through partnership programmes with farmers and suppliers and by insisting on rigorous application of legal requirements.

Evaluating and controlling risks through the application of HACCP (hazard analysis critical control point) has been widely implemented from farm to table by the F&D industry and now forms the basis for regulatory approaches to food safety. When properly used, HACCP enables the identification of risks and implementation of controls at various points in the production chain. HACCP cannot, by itself, guarantee food safety. It must be applied in conjunction with good manufacturing practices (GMP) and good hygiene practices (GHP). Hygienic design standards for processing equipment have been implemented through voluntary agreements between F&D manufacturers and equipment manufacturers. Equipment designed to such standards enables application of GMP and GHP.

GMPs have been key to the successful growth of the F&D industry over the past 150 years. GMPs go beyond observation of regulations. They focus on food safety awareness, training, education and implementation such that each person involved in the production chain understands his/her impact on product safety.

GHPs provide guidance to manufacturers on compliance with general hygiene requirements. They focus on existing legal requirements, but do not impose additional obligations. GHPs, which are in place in many sectors of the European F&D industry, enable manufactures to address food safety issues that are unique to particular product categories.

Risk-controlled distribution has been established by F&D manufacturers, together with the distribution chain and retailers, to guarantee that food and beverage products are transported in a manner that maintains safety. For example, the safety of frozen and chilled products is maintained by monitoring and controlling transport temperatures during distribution.

Validated analytical methods enable the rapid detection of food pathogens, and thus help to respond to, or avoid, food safety incidents. Developing new methods that are more sensitive and accurate, that are faster and more cost-effective is an ongoing challenge for the F&D industry. Before being adopted by authorities and implemented by industry, new

methods must be standardised and verified through collaborative studies.

Clear consumer communication about preventing food-borne diseases is essential. Although viewed as important by all stakeholders, it is only in recent years that industry, governments and consumer groups have pursued joint initiatives on this subject. The Canadian Partnership for Consumer Food Safety Education, the goal of which is to develop and implement a comprehensive consumer food safety education campaign, provides an excellent example of such a programme.

Traceability is an integral part of the quality management process for F&D manufacturers. Traceability does not, in itself, guarantee the safety of F&D products. However, it establishes the transparency needed to apply efficient control measures.

Food safety is not achieved through any single action, programme or regulation. Rather, it is the result of a comprehensive approach to risk identification, risk management and risk communication. Responsibility for food safety rests with all stakeholders, from farm to table. The F&D industry is committed to fulfilling its role in bringing consumers safe, high quality food and beverage products.

- **The International Life Sciences Institute**
  The F&D industry has participated actively for many years in research efforts, both public and private, to develop a scientific basis for food safety. In 1978, industry established the International Life Sciences Institute (ILSI). ILSI is a non-profit, worldwide scientific research foundation that seeks to improve the well-being of the general public through the pursuit of sound and balanced science. Its goal is to further the understanding of scientific issues related to nutrition, food safety, toxicology, risk assessment and the environment. By bringing together scientists from academia, government, industry and the public sector, ILSI is able to foster a balanced approach to solving health and environmental problems that are of common global concern. Over its 25-year history, ILSI has become recognised around the world for the quality of its research, its global conferences and workshops, its educational projects and its publications.

  ILSI is affiliated with the World Health Organization (WHO) as a non-governmental organisation and is involved in projects with WHO's International Agency for Research on Cancer and the International Programme on Chemical Safety ILSI has a special consultative status with the Food and Agriculture Organisation (FAO) of the United Nations. ILSI branches currently operate within Argentina, Australasia, Brazil, Europe, India, Japan, Korea, Mexico, North Africa & Gulf Region, North America, North Andean, South Africa, South Andean, south-east Asia and Thailand, as well as a focal point in China.

- **The Industry Council for Development**
  The F&D industry also promotes and supports food safety goals via the Industry Council for Development (ICD) which was created in the early-1990s. Through partnership with international organisations, in particular WHO and FAO, ICD activities focus on improving food safety, water quality and nutrition in developing countries. In this pursuit, it provides technical expertise and supports training, education and other means to raise awareness of public health professionals, food inspectors, industry personnel and/or academic scientists.

3.1.3 Food regulatory framework

Whether international, regional or national, regulations for F&D products have the same fundamental objectives: to protect public health, to protect against fraud, to assure fair trade practices and to provide consumers with

information on which to base their purchase decisions.

As with food safety, complying with regulatory requirements is a non-negotiable aspect of doing business within the F&D industry. An effective and efficient regulatory system is, therefore, highly important. Creating such a system, whether internationally, regionally or nationally, is dependent on the efforts and co-operation of governments, consumers, industry and scientific bodies. Within this context, the F&D industry has a long record of contributing its experience and expertise to the elaboration and revision of regulations that apply across its product range.

Codex Alimentarius embodies the international approach to food regulations. Founded in 1962, Codex is the intergovernmental programme of international food standardisation of the two United Nations agencies, FAO and WHO. The primary purpose of Codex is to protect public health and assure fair trade. In its 40-year history, it has compiled a wide range of general subject and commodity standards. Guidelines and codes of practice supplement the standards and help achieve the Codex objectives.

Initially, Codex standards were not obligatory. A government could choose whether or not to adopt the various standards as part of national regulation. However, in recent years a very important link has been created between Codex and the World Trade Organisation (WTO).

The F&D industry actively participates at Codex Alimentarius through national delegations and as representatives of non-governmental organisations (NGOs). The involvement of industry stems directly from the importance it places on the work of Codex:

- it is the only body promoting the international harmonisation of food standards;
- it exerts a definite influence on the development of national and regional regulations;
- it performs a unique function through the toxicological evaluation of additives, contaminants and veterinary drug residues (the work of the Joint Expert Committee on Food Additives and Contaminants) and of pesticide residues (the work of the Joint Meeting on Pesticide Residues);
- it offers an unique discussion platform among governments, scientists, industry and consumers.

The World Animal Health Organisation (the International Office of Epizootics – OIE) also plays an important role in the international regulatory context. For over 75 years, OIE has served as a forum that brings together leading scientists to provide information, to draft standards and to achieve international co-operation in the areas of animal health and veterinary public heath.

Food and drink regulations also exist within some regions. Under this type of approach, part of national sovereignty is waived in interest of the larger community. The EU provides the classic example of this approach through its system of harmonised regulations and directives. MERCOSUR, created to foster trade between Argentina, Brazil, Paraguay and Uruguay, has also developed a number of common regional food regulations.

Regulations covering F&D products exist within the legislative structures of all national governments. Participation by consumers and industry in the regulatory process is highly important. Many consumer associations delineate consumer needs and defend consumer interests as part of regulatory debates. A similar role is played by industry organisations. There are international, regional and national associations, both sectorial and global. They ensure that the expertise and experience of the F&D industry contributes to the development of high quality regulations.

Scientific bodies play an increasingly important role in providing the foundation for F&D regulations. The work of international scientific agencies (such as JECFA, JMPR), of governmental institutions (such as EU Scientific Committees for Food, US National Academy of Science), of universities and industry organisations (for example ILSI, European Academy for Nutritional Science), to name but a few, is highly important in contributing to the regulatory process.

Partnership and co-operation (between governments, industry and consumers) has been, and will remain the key to the successful management of international, regional and national food regulations. The F&D industry remains committed to fulfilling its role in this pursuit.

3.1.4 Health and nutrition

Eating patterns and dietary preferences are influenced by a complex variety of factors, including culture, religion, personal preferences, socio-economic status, physiological condition and genetics. It is important that approaches to health and nutrition take these factors, collectively and individually, into account. Within this context, optimal and sustainable growth and good health are dependent on people having a sufficient amount of food that is available from a varied and affordable food supply.

What constitutes a 'healthy diet' clearly differs between populations. Furthermore, the dietary needs and nutrient requirements of individuals vary based on sex, age, physical status and activity level. In developing countries, nutritional concerns tend to centre on the adequacy of energy and nutritional intakes to meet needs for growth and development. Vitamin and mineral deficiencies are prevalent, particularly low intakes of iron.
For example, one of the social issues facing the food industry in Nigeria is the high rate of malnutrition among women and children. This vulnerable group suffers from iron deficiency, anaemia, iodine and vitamin A deficiencies. The nutritional status of children in particular, is symptomatic of problems relating to food insecurity, poor maternal and childcare, access to health services and unsanitary environmental conditions.

Populations in developed countries can also be faced with malnutrition, but more often encounter issues related to over-nutrition. Obesity, certain forms of diabetes and cancer and cardiovascular disease are conditions with strong nutritional components that are frequently found in developed countries.

Over its long history, the F&D industry has provided consumers with a wide range of products from which they can choose a balanced, varied and moderate diet. In recent years, particularly with the increased focus on the role of nutrition and its importance in ensuring good health, industry has intensified its research and development efforts to focus on foods and beverages with special nutritional attributes. Examples include foods that are fortified with vitamins and minerals, foods that have reduced levels of calories, fat, cholesterol and sodium and foods that are specially formulated to assist in weight control or reduction.

The F&D industry supports consumer education initiatives through active participation with governments, health professionals and consumer groups.

- One such example, the FoodFitness programme, was launched in the United Kingdom in 1996. It encourages participants to pursue the benefits of healthy eating and physical activity through an innovative, fun-filled approach involving cartoon characters. Via FoodFitness, consumers have learned that achieving a healthy lifestyle need not be dull, demanding, extreme or expensive. FoodFitness materials are used by primary and secondary educators, and are also

available through the Internet at http//www.foodfitness.org.uk.

3.1.5 Food quality

'Food quality' is a multi-factored concept that, in addition to food safety and nutrition, includes those food attributes that meet consumers' needs and contribute to satisfaction with food products. Food safety and nutrition have been dealt with earlier. This chapter focuses on the drive by the F&D industry to satisfy consumer needs and create satisfaction.

What defines consumer need and satisfaction varies enormously according to culture, life style and developmental conditions within a country. It also varies regionally within the same country, and in fact, varies from consumer to consumer. The F&D industry strives to understand and meet these needs, and thus build satisfaction, through consumer insight research, through product design, by applying quality control and management methods, including product testing, all along the food production chain. For example:

- in Europe and Japan, consumer interests are geared towards convenience, freshness, taste and variety. The focus on increased variety has, in particular, created opportunity for many SMEs to enter the food market with niche and gourmet products. This, in return, has created a great many jobs in the European and Japanese food sector;
- in other parts of the developed world, consumer focus is on out-of-home eating, fast food and individual meals. The food service industry has responded with a wide variety of frozen, chilled and shelf-stable foods that satisfy consumer needs for taste, convenience and value;
- for consumers in developing countries, cost of goods is a key factor in food and beverage selection. The F&D industry offers nutritious products at low prices, while at the same time, maintaining good taste and convenience. For example, powdered milk is between 15% to 45% less expensive than UHT milk on a glass to glass basis.

The reputation of companies and their brands plays a major role in consumer selection of food and beverage products, a factor that drives fierce competition within the industry. Constant renewal of the product portfolio through innovation and renovation has become a fundamental basis for the success of any company.

Advances in science and technology have enabled the F&D industry to be highly successful in developing products to meet the diversity of consumer needs for taste, nutrition, variety and affordability. For example, aseptic filling has greatly reduced the processed taste of conventional sterilised products. Techniques for controlling moisture have made it possible to distribute fresh products with a greatly extended shelf life. The wide availability of bottled water, frozen foods and chilled/ready-to-eat products represent additional examples of how the F&D industry meets consumer needs.

Quality efforts by the F&D industry also extend to the special needs and interests of consumers for products that are Kosher, Halal, organic (bio) and specially formulated for dietary management (such as infant foods, lactose free, slimming foods, sports foods).

3.2 Relations with employees

As highlighted in the part I, the F&D industry is one of the largest employers in many parts of the world, providing jobs, wages, benefits and tax revenues. The F&D industry has recognised rapidly that business performance and personal development need to go hand in hand. Therefore, companies have developed internal human resource (HR) policies and programmes which emphasise employees' participation as an important pillar of the business.

The companies' objective is to create an environment that encourages all employees to develop and perform to their fullest potential. Overall, these policies and programmes focus on specific key aspects:

- employees' rights;
- health and well-being of employees;
- education, training and other relevant initiatives.

3.2.1 Equal employment opportunities and employees' rights

Although different legislation applies in the various regions of the world regarding equal employment opportunities and rights, the F&D industry takes every opportunity to ensure that all employees enjoy the same prospects for success. Employees are protected against employment discrimination based on race, colour, religion, sex, national origin, disability, age or any stereotypes or assumptions about the abilities, traits or performance of an individual.

- For example in the United States, for almost 40 years, equal employment opportunity laws have contributed to levelling employment potential for all Americans. Most recently, the Americans with Disabilities Act of 1990 prohibited employment discrimination against qualified individuals with disabilities in the private sector, and in state and local governments. The Equal Employment Opportunity Commission strictly enforces all of these laws.

Other fundamentals crucial to the credibility of any HR policy are employees rights, wages, communication between workers and management, assistance for staff in case of restructuring, etc. While expanding their business abroad, F&D companies have taken into consideration the social conditions and cultural differences involved in setting a HR model.

3.2.2 Occupational health and safety

The health and safety (H&S) of employees is a fundamental and long-established priority within the F&D industry. Most F&D companies have an H&S policy and management system, and many report publicly on progress towards corporate H&S indicators and targets. Common indicators include the frequency of workplace accidents, lost workdays due to injury or sickness, property damage, breaches of H&S legislation and sum of financial penalties incurred.

- Procter & Gamble's health and safety principles state that 'nothing we do is worth getting hurt. Safety and health can be managed. Every illness and injury could and should have been prevented. Safety and health is everyone's responsibility'. P&G recently undertook a benchmarking study to assess their H&S management systems and performance against those of seven other multinationals, to assist their long-term goal of continuous improvement and the delivery of benchmark results [P&G, 2001];
- At Cadbury Schweppes, all business units have H&S programmes in place, which meet local legislative requirements, but they are also working towards incorporating corporate best practice guidelines into all local programmes, to ensure that the highest standards are achieved throughout the company [Cadbury Schweppes, 2000/1];
- Heinz's safety model follows a pyramidal structure comprised of values, control tools, cause and consequences. Each manufacturing location employs a dedicated safety professional who participates in the Heinz Safety Qualification [Heinz, 2000];
- Danone Shanghai Biscuits established a safety committee in 2000, comprised of employees from all company functions. The committee acts as an interface between employees and management, highlighting problems and contributing to rapid

solutions. The committee provides a forum for direct exchange and enables employees to put forward their own suggestions for improvements [Danone, 2000].

3.2.3 Internal education and training

Over the last ten years, the F&D industry has undertaken many initiatives to improve internal education and training. Training and education aim at developing skills to benefit the company and employees. Many F&D companies organise training programmes in purchasing, marketing, technical, quality, safety, environment and human resources. Internal training programmes often form part of a company's management systems.

- For example, at the Cadbury Stani factory in Buenos Aires, operation managers have given environmental awareness training to both company employees and outside contractors as part of their EMS [Cadbury Schweppes 2000/1].

Many F&D companies have also set up intranet sites to deliver training to their employees.

Training seminars gathering staff members from the various countries where a company operates are frequently organised. The goal is not only to train employees in specific areas of management expertise, but also to spread a company's culture and share best practice, by bringing employees in different functions, at different levels and from different countries together to consider subjects of common interest.

A major issue for the F&D industry will be developing programmes to continually upgrade employee skills to keep pace with rapid technological change. Training programmes to educate workers and managers on implementing innovative processes and organisational structures, plus better labour management to reach long-term prosperity commitments will be needed. This could imply closer ties between companies and educational institutions.

3.3 Local communities

Supporting local community development and quality of life forms a key part of the F&D industry's social commitments. F&D companies consider community investment as imperative for sustainable business. Many companies have set up specific programmes to foster community investment. There are numerous examples, a selection of which is given below.

- The Canadian food and consumer products industry has made many contributions to social, public and community programmes. Food and Consumer Products manufacturers of Canada (FCPMC) companies give an estimated CD120 million in cash donations and groceries annually. They also give their time, their energy, their goods and their equipment to make their communities better places to live - for everyone. Some of the beneficiaries of food and consumer products companies charitable commitments are: United Way/Community, Programmes for Young Canadians, Health Causes and Needy Families;
- Nestlé is actively supporting local communities in the numerous countries where the company operates. For example, Nestlé Morocco provides both funding and employee involvement in the Zakoura Education Foundation, which provides 'informal' education for children who are unable to participate in the public system due to social and economic reasons [Nestlé, 2001b];
- Under Unilever's community involvement programme, operating companies work in partnership to support projects aiming at improving healthcare, raising levels of education and encouraging local economic, environmental and cultural activity. In 2000, Unilever invested over USD50m in community involvement projects such as the Lifebuoy Floating Hospital in Bangladesh, which brings basic healthcare

and hygiene advice to underprivileged communities [Unilever, 2001b];
- Cadbury India has recently set up the Cadbury Community initiatives programme. The main objective of the programme is to stimulate participation in local community improvement projects. For example, in the village of Gurikha, in India, one project resulted in the foundation of a nursery school, improvements in the primary school, the establishment of a doctor's clinic and provision of veterinarian services [Cadbury Schweppes, 2000/1];
- Danone France has established a Solidarity Fund to finance small-scale projects aimed at bringing people back into society. Created in 1992 and administered jointly by Danone and unions, to date the Fund has financed 73 projects throughout France [Danone, 2000];
- Coca-Cola has formed partnerships with charitable and non-profit organisations to respond to the needs of local communities. For example, emergency relief contributions in Mozambique, Turkey and India; partnership with Rotary International in India for government's polio immunisation drive; creation of the Coca-Cola Africa Foundation to address issues such as health care, literacy and education, the environment and HIV awareness.

3.4 Relations with other stakeholders

Since the 1992 Rio Summit, the dialogue among business, civil society, consumers and governments has matured notably. Reciprocity among actors has improved. A real stakeholder dialogue is now set up and there are many synergies that are currently developing between the various actors of the food supply chain.

3.4.1 Supply chain

At the upstream part of the chain, the partnership with the suppliers of agricultural raw materials is essential to maintain high environmental standards and to encourage dissemination of best environmental practice.

Many companies work in partnership with farmers and growers, offering appropriate technical advice, training and contributing to relevant research projects to improve the quality, efficiency and productivity of agricultural production.

The F&D industry has also initiated programmes, which ensure that raw material suppliers receive fair and equitable prices, particularly for key commodities such as coffee and cocoa. Examples are provided in section 2.2.1 (page 20) on raw materials.

There are many suppliers of other materials as well. All suppliers are encouraged to follow sustainable business practices. To assess the way they meet their responsibilities, many F&D companies have incorporated environmental, quality and safety components into supplier audits.

- For example, Nestlé Philippines has launched in 2000 a 'Greening of the Supply Chain' programme which aims to share with its suppliers, contractors and service providers its environmental practices and proactive programmes [Nestlé, 2001a].

In the last ten years, the relationship between manufacturers and retailers has become more collaborative and cross-functional to create genuine partnerships – joint project teams, staff placements into each other businesses, common initiatives.

The management of the relationship with all actors in the supply chain will have a great influence on the F&D industry's road to sustainability. The growth of the agri-food system will be increasingly determined by the greater efficiency of the components within the supply chain and by the competitiveness of the system as a whole. Producers, processors, retailers and foodservice operators increasingly will need to work in partnership to more efficiently and effectively meet market demands.

This is a key factor since vertical integration of agricultural producers and food processors varies a lot depending on geographic regions and companies. The food and beverage processing sector faces a consolidating distribution sector increasingly dominated by major grocery chains and large food service firms. Aside from the leverage that distributors could apply to processors' margins, processors are also faced with the adoption of new methods of doing business, principally ECR, and the demand for private labels.

3.4.2 Investors and shareholders

Over the past few years, investors have become increasingly interested in companies' environmental and social performance due to the recognition that these factors impact upon financial performance. Shareholders too are beginning to consider a company's wider performance, illustrated by the rise in ethical investment funds.

To measure their performance, certain companies have been retained by one or the other index for sustainable development like the FTSE4Good (from the United Kingdom FTSE), the ASPI - ARESE Sustainability Performance Index (index of the French rating agency ARESE), the Dow Jones Sustainability Indexes.

Sustainability is increasingly regarded as a proxy for enlightened and disciplined management. Leading sustainability companies actively set industry-wide best practices with regard to corporate sustainability principles such as strategy, innovation, governance, shareholders, employees and other stakeholders.

The Dow Jones Sustainability Indexes (DJSI) are based on the world's first systematic methodology to identify the leading sustainability-driven companies on a global basis.

- The Dow Jones Sustainability World Indexes include the leading 10% in terms of sustainability out of the biggest 2,500 companies in the Dow Jones Global index. The F&D industry has seven index members in the food products group: Unilever NV, Unilever Plc, Cadbury Schweppes, Groupe Danone, Nestlé (Malaysia) Bhd, Nestlé SA, Heinz Co. Also five members in the distillers, brewers and soft drinks industry group: South African Breweries, Allied Domecq Plc, Asahi Breweries Ltd, Diageo Plc, Cervecerias Unidas. Procter & Gamble is the sector leader in the non-cyclical goods and services industry group.

3.4.4 Non-governmental organisations (NGOs)

NGOs represent a large spectrum of activities on behalf of social and ethical consciousness. Interfaces with the food and drink industry can range from local associations to worldwide organisations with strategic global objectives. Increased dialogue is necessary with NGOs, and it seems to be more productive either in private face-to-face meetings or in larger meetings where agendas are set and adhered-to under a non-biased chair.

In many countries, the ability to work through industry associations, and arrange meetings involving NGO participation are increasing. Food and beverage processors realise that many NGOs have a wider range of concern, but mutual interests are integrated in those concerns, and constructive dialogue is necessary to make these NGOs more aware of industry's perspective.

- Nestlé South Africa is supporting different initiatives and organisations in the areas of education, nutrition and social welfare such as EcoLink and LEAP. EcoLink is a non-profit, non-government environmental education trust situated in the Mpumalanga Province of South Africa. Both EcoLink and LEAP help rural communities to improve

their quality of life by providing practical training to ensure the sustainable use of natural resources [Nestlé, 2001b].

3.5 Corporate social responsibility (CSR)

In the recent years, the concept of corporate social responsibility (CSR) has gained importance. This concept relates to the behaviour of companies in relation to the various stakeholders: customers, employees, contractors and business partners, shareholders, local communities, governments, public authorities, trade unions, NGOs and society at large. Although presented as a new concept, CSR includes already existing practices of the industry.

Many F&D companies have already been, and continue to be, active in promoting it to the other stakeholders of the supply chain. Ethical, social and environmental considerations are becoming more and more part of strategic investments/business decisions and of the company's day-to-day management. Many F&D companies are, on a voluntary basis, increasingly developing their own corporate principles, codes of conduct or similar internal management guides. Others pursue good corporate governance in less formal ways.

In other words, approaches to and levels of CSR vary and are influenced by a multitude of factors (current needs, size of companies, the situation in the countries in which they operate, etc). Companies' approaches are not static, but are developed and refined on a continuous basis, as new situations and challenges arise.

A systematic request for transparency of CSR practices has arisen over the last ten years. F&D companies endeavour to fulfil this request as much they can through reporting, accounting, information campaigns, etc to communicate their sustainability achievements to consumers and other stakeholders.

Part 2: Means of implementation

4 Specific tools for implementation

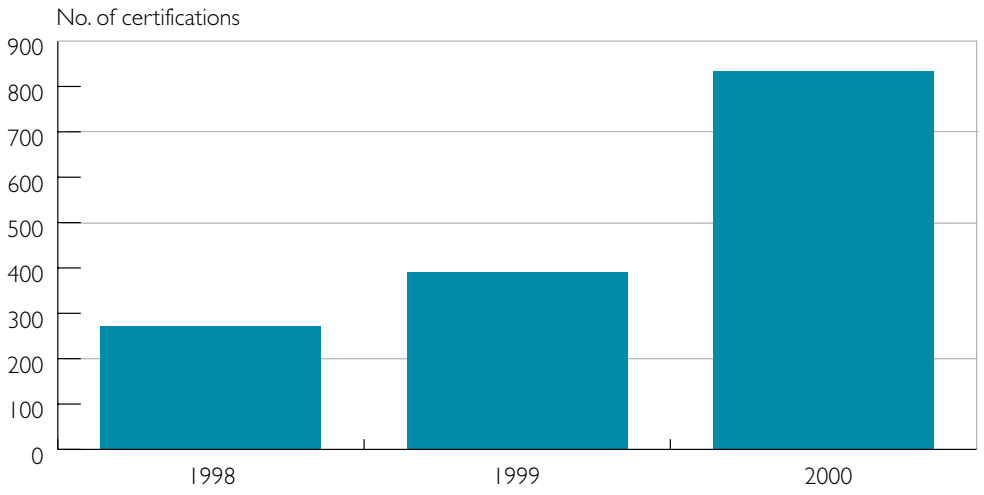
4.1 Environmental management systems (EMS), life cycle analysis (LCA) and environmental performance indicators (EPI)

The establishment of environmental management systems (EMS) reflects the high priority given to environmental considerations and their integration in all aspects of the F&D industry's activities. Implementation of EMS offers a means of demonstrating commitment to continuous environmental improvement as well as encouraging the development and adoption of best practice initiatives. EMS involve developing policies and guidelines, establishing objectives and programmes, allocating environmental responsibilities within an organisational structure, training and communication activities, operational control and conducting surveys and audits.

Most F&D companies have implemented EMS, and a large number are certified or in the process of being certified to ISO 14001 or the EU Eco-Management and Audit Scheme (EMAS). This is illustrated by the fact that the F&D industry has the third highest number of EMAS registered organisations (306) in any sector, and represents 8% of all EMAS registered organisations [EMAS Helpdesk, 2001]. Meanwhile, certifications to ISO 14001 have also increased significantly as shown by Figure 2.

- Cadbury Schweppes has developed a Guide to Environmental Management, which is implemented throughout the company. It includes different elements such as the nomination of managers with environmental responsibilities, the maintenance of a register of relevant legislation, a set of best practice guidelines that are updated and supplemented. It also sets training, auditing and improvement objectives [Cadbury Schweppes, 2000/1].

Figure 2: ISO 14001 Certification in F&D (and tobacco) industry 1998 to 2000



Source: the ISO Survey of ISO 9000 and ISO 14000 Certification, 2001

- In 1996, Nestlé developed the Nestlé Environmental Management System which has been implemented throughout the company. The system is compatible with ISO 14001 and EMAS, providing a common coherent framework for environmental management at all levels of the organisation [Nestlé, 2001a].

- Unilever has extended its EMS to cover all non-manufacturing parts of the operation. It currently has 103 sites certified to ISO 14001 and has set a target to obtain certification for all its lead sites by 2003 [Unilever, 2001]. Meanwhile, Danone has also set a target for all 170 plants to be audited, granted ISO 14001 certification, or taking steps in this direction by the end of 2001 [Danone, 2000].

- In Belgium 35% of the F&D companies have implemented an environmental management system (21% internal, 10% integrated, 4% ISO 14001). In Australia, the AFGC 2001 members survey revealed 53% of F&D companies have a formal EMS, of which 10% are already certified to ISO14001, and 49% of members are pursuing ISO 14001 certification. In Nigeria, National Guidelines on Environmental Management systems have been developed. In Colombia 38 companies are ISO 14001 certified, five of which are from the F&D industry.

- In the United States, most companies have instituted an EMS. These systems are used by the food industry to improve the company's environmental performance, regulatory compliance, and to minimise its regulatory footprint. In the US, compliance with regulations represents a large portion of a food processor's EMS programme due the far reaching nature of United States environmental laws.

- One aspect that might increase the uptake of EMS, particularly the EMAS scheme in Europe, is the provision of regulatory benefits. In the United Kingdom, the Food & Drink Federation (FDF) is working with the Environment Agency to explore the feasibility of linking regulatory control in respect of pollution prevention and control legislation with EMS [UK FDF, 2001].

Other tools such as life cycle analysis (LCA) and EPIs are also used by the F&D industry to manage environmental impacts. LCA emerged in the 1980s as a methodological approach to inventory and assess environmental impacts throughout the whole life cycle of a product or service (from raw material through processing through final use, consumption and disposal).

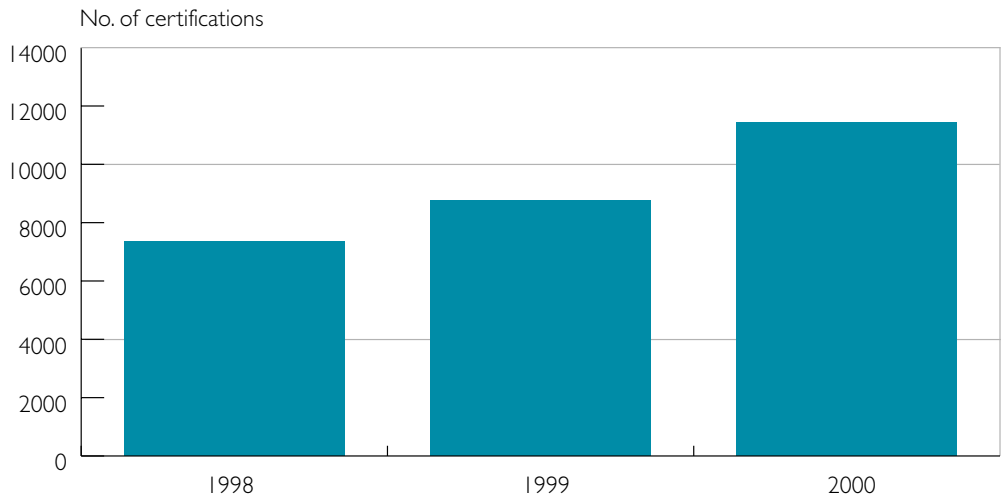
The F&D industry recognised LCA as an important element in the early attempts to manage entire agri-food chains. Although application of LCA methodology has several weaknesses (such as choice of system boundary, data availability and reliability, allocation procedures) which has sometimes resulted in the accusation of LCAs being subjective, it has proven in fact to be a useful tool, when used within limits. Several institutes have developed commercial LCA software and it is now a more or less standard tool.

The results of studies on different products such as margarine, dairy, bread, pork, natural mineral water and also packaging have helped in understanding and improving the food supply chain environmental impacts. Many F&D companies were (and some still are) involved in LCA studies.

4.2 Quality management systems

The F&D industry has put in place quality management systems (QMS) which include the organisational structure, procedures and resources needed to ensure that good quality management practices are followed. As shown in figure 3, a large number of F&D companies are certified or in the process of being certified to ISO 9000, and are introducing the new version of the ISO 9000 standard

Figure 3: ISO 9000 Certification in F&D (and tobacco) industry 1998 to 2000



Source: the ISO Survey of ISO 9000 and ISO 14000 Certification, 2001

(December 2000) which encourages a consumer-focused approach.

4.3 Occupational health and safety management systems

F&D companies have implemented many programmes to secure the occupational health and safety of their employees (see section 3.2.2, page 39). The types of programmes vary with different cultures but the ultimate goal – that all injuries should be prevented – remains the same. Some companies are now moving to combine the management of environment, health and safety under one EH&S system, while retaining the individual identities of each function. It remains to be seen whether there will be long-term benefits of combining these functions.

4.4 Research and development

Research and development (R&D) is a crucial part of any F&D company and in particular has a vital role to play in identifying and developing technological solutions that can lead to improvements in nutrition, food safety, and environmental and social performance.

- For example, Nestlé has as many as 20 sites dedicated to R&D activities around the world with some 3,500 staff and invests year after year Sfr800 million in R&D [Nestlé, 2001a]. Since 1991 Danone has funded over 300 research programmes on food related public health problems, with an annual budget of approximately USD1.1 million [Danone, 2000].

R&D in the F&D industry typically involves co-operation with scientific and research institutions, universities and suppliers. For example, in Spain, Kraft Foods International has signed an agreement with the University of Leon to research the use of F&D industry organic by-products as fertilizers [Philip Morris, 2000].

R&D will continue to play a vital part in the F&D industry's response to the challenge of sustainable development.

4.5 Reporting

For decades, it has been common practice for companies to issue annual reports and accounts. More recently, the F&D industry has

responded to stakeholders' increasing desires for transparency about the operations and values of the 'companies behind the brands'. F&D companies and national associations have begun producing environmental and social performance reports, and in some cases these have been integrated into overall sustainability reports. Table 6 highlights a selection of the reports published by the F&D industry. The number of companies producing reports increases every year and this trend will certainly become more widespread, due to improvements in monitoring systems and sustainability performance which F&D companies are keen to report.

Table 6: Examples of food and drink industry reports

F&D company/ country association	Report (latest version)
Australian Food & Grocery Council (AFGC)	Environment Report 2001
Belgium Federation of Food Industry (FEVIA)	Environmental Report of the Food Industry, 1999
Allied Domecq	Environmental Performance 2000 Corporate Social Responsibility Report (unpublished)
Ajinomoto Co.	Ajinomoto Group Environment Report 2000
Asahi Breweries	Environmental Report, 2001
Cadbury Schweppes	Environment, Health & Safety Report Winter 2000/1
Danone	Social Responsibility 2000 Report (also includes environmental performance)
Diageo	Environmental Report 2001
Heineken	Environment Report 1998-1999
H.J. Heinz	Environment, Health and Safety Report, 2000
Kikkoman Corporation	Kikkoman Environmental Report 2001
Kirin Breweries Co.	Kirin Beer Environment Report 2000
Nestlé	Environment Progress Report 2000 Nestlé in the Community (2001) Nestlé Sustainability Review (2002)
Procter & Gamble	2001 Sustainability Report
South African Breweries Unilever	Corporate Citizenship Review, 2001 Environmental Performance Summary Report 2001 Environmental Performance 2000, 'How We Care For The Environment' Social Review 2000: Unilever's Approach to Corporate Social Responsibility

N.B. F&D associations from Brazil, Canada, Chile, Colombia, Japan, Nigeria, Philippines, South Africa, United Kingdom and United States provided contributions to this report which covered their economic, environmental and social performance over the past years and future challenges on the path towards sustainable development.

4.6 Information, communication and education

Over the last ten years, F&D companies have increasingly taken a proactive approach to communicating their environmental, social and economic activities and achievements to consumers and other stakeholders. A variety of tools, ranging from labelling to annual reports, have been used to ensure that information is tailored to each audience and issue. These mediums are used variously to raise society's awareness of sustainability issues, build brand reputation, enable consumers to exercise informed choice and respond to criticisms. Selected examples of each key tool are provided below.

4.6.1 Information campaigns

F&D companies have developed and sponsored information campaigns on a wide range of topics and for a variety of audiences from consumers to raw material producers, as the following examples illustrate.

- Heineken has participated in the development of an international TV documentary series 'Water, a drop of life' which aims to raise awareness about water supply issues among the general public [Heineken, 2001]. In Romania, SC Ursus has run a USD10,000 litter campaign to educate local people and tourists about respect for the environment and the need to keep beaches litter free [SAB, 2001].

- In Russia, Nestlé developed and sponsored a 'good nutrition programme' to teach children about the importance and benefits of nutrition. The programme was launched in 1996 with the support of leaders from the fields of nutrition, health and education, and used the popular *Sesame Street* characters to engage the children's attention [Nestlé, 2001b].

- In the United States, the Wheat Foods Council (WFC), which is a body voluntarily funded by producers, millers, bakers, pasta and tortilla manufacturers, has began a large media campaign since 1972 to show the importance of grains in the diet. Lately, the WFC, mandated by the United States Food & Drug Administration (FDA), widely publicised (TV, press) the importance of enriched grain foods fortified with folic acid, a B vitamin that has proven to decrease the risk of heart disease, some cancer and Alzheimer's disease.

4.6.2 Web sites

Many F&D companies and associations are using Web sites as an efficient, accessible and easily updated information channel for consumers and other stakeholders.

For example, the United Kingdom FDF has three Web-based consumer information programmes:

- Foodfitness to encourage a healthy balanced, varied diet and active lifestyle,
- Foodlink to promote food safety messages,
- Foodfuture to provide balanced information about the issues surrounding genetic modification and food.

4.6.3 Education and training

In order to raise awareness and responsibility on a wide range of issues from the environment to health, safety and nutrition, the F&D industry has undertaken a number of initiatives to improve education and training both internally and externally. These initiatives reflect the fact that the F&D industry cares for the general welfare of communities. Further information on internal training programmes is provided in part 2. 2.3 (page 27)

External education and training initiatives within the industry are numerous and diverse, in both nature and scope. They range from specific education/training programmes on environmental issues to school building projects.

- For example, Procter & Gamble China is supporting project Hope, a national organisation that builds school in rural Chinese communities [P&G, 2001].

  Employees in Nestlé Brazil initiated 'Programa Nutrir', which uses a range of creative activities such as games and toys to educate children in good hygiene and nutrition concepts and practices. The programme was developed by health technicians to tackle micronutrient deficiencies, which occur as a result of poor nutritional knowledge [Nestlé, 2001b].

- Nestlé also sponsors the Water Education for Teachers Project (WET), an international water science and education programme for classroom teachers and other educators. Project WET USA which has reached over 50 million young people and adults, has now been extended to Mexico and the Philippines [Nestlé, 2001a].

4.7 Voluntary initiatives

In its effort to operate in a sustainable way, the F&D industry has undertaken a range of voluntary initiatives going above and beyond its legal obligations, some examples follow.

4.7.1 Labelling

There is an increasing demand for F&D companies to provide detailed product information, to enable consumers to make informed choices. Many existing labels and certificates for F&D products already inform consumers on the origin of the product, its ingredients, its composition and its nutrition, due to strict regulatory requirements. Other forms of product information may be self-declared or third party certified (for example United Kingdom Soil Association organic certification scheme, Fairtrade label). However, the primary purpose of the food label is generally to inform the consumer, not to educate, and other supporting materials are used to assist consumer understanding.

4.7.2 Certification

Certification has traditionally been used within the F&D industry to guarantee the quality of raw materials. However, certification schemes are now also being used to set environmental and social performance standards and ensure that these are followed by suppliers. Third party certification schemes such as the Marine Stewardship Council (MSC), provide several benefits such as reducing the need for F&D companies to undertake their own audits of raw material suppliers, thus saving time and resources, and providing consumers with a trusted and recognised logo. Further information on the MSC is provided in section 2.2.1.

4.7.3 Negotiated agreements with governments

Increasingly, the F&D sector is responding to the challenges of sustainable development on a voluntary basis through negotiated agreements signed by governments and business. This approach is generally appealing to industry, since it can choose the most efficient measures and can integrate environmental modifications into its long-term business planning.

- A good illustration is the Packaging Covenant in the Netherlands. The covenant encourages companies to work across the entire spectrum of the packaging chain. Covenant I was signed in 1991, renewed in 1997 and the third one is currently under negotiation. The result of this co-operation is impressive, as one year before the end of Covenant II, the agreed recovery targets are nearly achieved, with less effort, costs and red tape than in other countries.

- The United Kingdom F&D industry also entered into a climate change agreement with the United Kingdom government whereby participants receive an 80% discount from the climate change levy in return for meeting challenging energy reduction targets as a contribution to the

reduction of greenhouse gas emissions. The levy forms an integral part of the government's climate change programme, helping the United Kingdom to meet not only its Kyoto target but the Government's own target of a 20% cut in carbon dioxide emissions by 2010.

- In the United States, as part of an Environmental Protection Agency's Project, one medium-sized juice processing facility developed a facility-wide comprehensive operating plan that consolidated environmental permits and all operating procedures into a single manual for their facility. The project includes stakeholder participation and should consolidate seven federal, state and local environmental permits by developing just one comprehensive operation permit instead of many each year. It is also improving compliance with environmental requirements by involving staff in the development of the facility-wide operating plan and by using simple language to describe more clearly what is required. In the first year of the project, the facility eliminated several hazardous waste streams, and a 99-acre area previously used to disperse wastewater, which relieved the community of irritating odour problems.

4.7.4 Partnerships with the United Nations

F&D companies have participated in UN initiatives on a variety of issues, as the following examples illustrate.

Global Compact

The United Nations Global Compact is an initiative of UN secretary-general Kofi Annan. In his speech to the Davos World Economic Forum in January 1999, he proposed this compact between the UN and business as a means to uphold and promulgate a set of worldwide core values.

The Global Compact is a short, basic set of truly universal principles for living and working in global society addressing the areas of human rights, labour standards and environmental practice. An increasing number of companies have been endorsing the Global Compact and are referring to it in their own business principles.

Ramsar Treaty

In 1971 an intergovernmental treaty for the protection of humid zones was signed in Ramsar, Iran.

- In support of the treaty, beverage company Evian pledged to apply the convention to a three-year action plan which ran from 1997 to 2000. The action plan had three objectives:

  - to raise awareness among decision-makers and the general public of the need to introduce environmental protection initiatives,
  - to train technicians in wetlands protection methods,
  - to promote the transfer of know-how.

  From 1998 to 2000, Danone and the 'Fond français pour l'Environnement mondial' invested 1 million in this programme. Following a decision to extend the scheme until 2002, a further 300,000 will be contributed in 2001/2002 [Danone, 2000].

4.7.5 Industry codes of conduct

Some F&D individual companies or industry associations have developed industry codes of conduct which formalise their commitment to sustainable development principles. They also participate in various industry initiatives at the national or global level.

- Codes of conduct in Canadian F&D companies take on a wide social responsibility challenge. These issues focus on the protection of the environment and respect for the communities in which business operates. Companies interested in reducing legal liabilities and maintaining

their corporate image have acted accordingly to extend the reach of stakeholders addressed in codes of conduct to include community and environment.

Some companies have adopted internal codes of business principles. These translate the company's commitment to doing business in a responsible way into practical guidelines for employees. Similarly, the United Kingdom FDF Council has endorsed the FDF Environmental Guiding Principles, which is commended to all their members and reflects the industry's commitment to environmental responsibility.

Many F&D companies have also publicly committed to contribute to sustainable development as signatories of the International Chamber of Commerce (ICC) Charter on Sustainable Development. Launched in 1991, the Charter provides a basic framework of reference for individual corporations and business organisations throughout the world. It sets 16 key principles on which to build integrated environmental management systems.

In the Philippines, the F&D industry is actively participating in the promotion of the Philippine Business Charter for Sustainable Development through the efforts of the Philippine Business for the Environment and other industry associations.

4.7.6 Industry organisations

There are numerous industry organisations within the F&D industry, from national and regional horizontal trade associations to international and sectoral F&D organisations. Several of these organisations have full time employees with responsibility for environmental, social, regulatory and economic issues. As previously mentioned, some also produce sectoral reports covering these issues. In addition to the trade associations, there are several examples of how F&D companies participate in industry organisations with specific environmental, social or sustainable development mandates, as illustrated below.

- Some F&D companies are founding members of the World Business Council for Sustainable Development (WBCSD). The WBCSD is a coalition of 160 international companies, united by a shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress. Members are drawn from more than 30 countries and 20 major industrial sectors. F&D members include Cargill, Coca Cola, Heineken, Kikkoman, Nestlé, P&G, Unilever etc. The WBCSD has also regional branches such as the Brazilian Business Council for Sustainable Development (CEBDS) which comprises 50 Brazilian companies.

- The European Recovery and Recycling Association (ERRA) was founded in 1990 by 29 companies in the consumer and packaging sector. ERRA's mission was to facilitate the establishment of economically efficient and environmentally beneficial systems to collect, separate and recover used packaging. ERRA's initiatives have since been taken on by various European national packaging waste management schemes.

4.8 Awards

The F&D industry have been granted a number of awards which publicly recognise their achievements in environmental, social and sustainability performance. Lists of awards granted to F&D companies can be found in individual companies reports (please see the bibliography in annexe 2).

Part 3: Future challenges and goals

5 Ensuring the quality, safety and availability of food

The issue of food availability, quality and safety constitutes one of the main global challenges for the food industry. However, a distinction must be made between developing countries where availability of food is a key issue closely linked to poverty, and developed countries where current debate focuses more on food quality and safety, especially in Europe.

5.1 Availability of food

The growth of the world population has an important impact on access to food for individuals, particularly in developing countries where there is a real need to produce sufficient quantities of safe and good quality food. Hunger is a fundamental constraint to human development, especially for children, compromising their chances of a healthy and fulfilled life.

The main indicator for monitoring developments in world food availability (often referred to as 'food security') is per capita food consumption, measured at the national level by average dietary energy supply in calories. In 1990 to 1992, an estimated 840 million people worldwide, accounting for 20% of world population, were undernourished. This is projected to fall to 680 million, or 12% of world population, by 2010.

However, projections suggest that food energy requirements are set to double in developing countries and triple in sub-Saharan Africa by 2050, as a result of population growth and, to a lesser extent, changes in the population's age structure. In addition, production growth constraints facing individual countries will continue to be a major factor affecting the prospects for improvements in food security. This is particularly the case for low-income countries that are heavily dependent on domestic agriculture for food supplies, income and employment and have limited potential to import food. In these countries, the pressures that contribute to the degradation of natural resources and unsustainable agriculture are intensifying, further threatening both food security and economic well-being.

The challenge is to find out how to assist people who live in areas where food production and supply is inadequate for their needs. Strategies must aim to improve human living conditions and well-being via greater emphasis on education and job-related training, diversification from agriculture to other sectors, as well as investment in appropriate agricultural processing and marketing capacity to add value to produce, and improved transport infrastructure to facilitate the transfer of food to markets. The F&D industry is willing to increase and improve its support for such initiatives. However, primary responsibility for food security must lie with governments, and hence the role of the F&D industry is limited to support and co-operation activities.

5.2 Emerging technologies

The past three decades have seen a number of important scientific breakthroughs in such diverse fields as molecular biology and bio-informatics that have an enormous impact on the F&D industry. This development, like any breakthrough in science and technology, brings with it both tremendous opportunities and fundamental questions.

Its most publicised and debated aspect is undoubtedly genetic engineering. This technology made its first appearance in the food supply chain in the late-1980s, through the introduction of enzymes from genetically modified micro-organisms, used for the production of ingredients and additives. These applications are widely seen as positive

because they allow 'softer' and less polluting processes, resulting in reduced energy consumption and waste.

It was the introduction of a genetically modified (GM) soya bean in 1996, followed by genetically modified maize varieties, which triggered a broad public debate, initially in Europe, but subsequently spreading to other parts of the world. Since that first introduction, the cultivation of GM crops has increased enormously from less than one million hectares in 1996 to more than 50 million in 2001.

Virtually all the crops that are being cultivated today are commodities and have been modified to improve their agronomic characteristics. There is growing evidence that these crops may eventually lead to reductions in the use of agro-chemicals and hence may contribute to more sustainable agricultural practices. Perhaps the most important contribution of this technology to the world's food supply is its potential to provide crops that are capable of growing under adverse conditions, such as drought and high salinity. In this way, it could be of great help in addressing one of the most pressing global issues of the next decade, namely food security.

On the other hand, there are still questions to be addressed about the environmental impact of some of these crops. Regarding their safety for human health, there is widespread consensus among scientists and international regulatory organisations that genetically modified crops, which have been subjected to regulatory scrutiny, and the ingredients derived from them are safe for food use.

Weighing the pros and cons, the food industry is of the opinion that the potential of this technology cannot be ignored and therefore supports ongoing research in this field. Only sound scientific data will allow the international community to find the right balance between the risks and benefits of gene technology.

More recently, science has started to study and explore complete plant and animal genomes, going beyond the 'one gene, one product' concept that was the basis of the first genetically modified crops. The scientific focus is now increasingly on how genes are expressed, how they and their expression products interact between themselves and, last but not least, how environmental factors interfere with gene expression in a general sense. In a way, science is moving from a reductionist approach to a more holistic view.

The multidisciplinary approach, made possible by new scientific breakthroughs with exotic sounding names like genomics, proteomics, bio-informatics and high throughput analytical techniques, produces new knowledge at an incredible speed; it is said that knowledge in this field doubles every 18 months.

Unravelling the meaning of the information that becomes available is a major future task for university and industry scientists alike. As an example, many genes of many organisms are not expressed, which in practice means that organisms could do much more than they are actually doing. It might be possible in certain cases to switch these genes on to give back to the organism specific and desirable characteristics without having to transfer genetic material from other organisms.

There is no doubt that this new knowledge will have a significant impact on the traditional practices of crop and livestock improvement through breeding and thus on the food industry's raw materials. Equally important though, it will eventually also have an enormous impact on the nutritional and sensory aspects of our food and on the role food plays in maintaining health.

As previously mentioned, at this moment most, if not all, of the commercially cultivated genetically modified crops are commodities, which are widely used as sources of mostly minor and unappealing ingredients. None of

them has so far delivered a direct and noticeable benefit for the consumer. Advantages such as the reduction of chemical input and production costs along the chain are incremental and will only gradually become noticeable at end product level.

This absence of tangible consumer benefits is one of the major reasons for the reluctance among European consumers to accept gene technology as an integrated part of the food supply chain. As, ultimately, the F&D industry can only deliver what its consumers want, this reluctance has led to a situation in Europe where the use of ingredients derived from genetically modified crops is limited.

The future will only see this situation change through complete transparency about the risks and use of the technology. Such transparency must be based on facts and scientific data and avoid the polarisation that characterises the current debate in Europe. Finally, it can only be achieved if all operators in the food supply chain participate and contribute.

6 Improving resource management

As shown in the environment section, the F&D industry has already undertaken a wide range of initiatives in order to improve resources management. These results need to be consolidated and such initiatives extended, particularly in the areas of water and energy management.

6.1 Water management

The need to achieve sustainable water management in the various regions of the world requires commitment and action from all stakeholders. The F&D industry recognises it must play a significant role in improving water management in order to ensure a long-term sustainable supply of clean water.

The F&D industry participated in the second World Water Forum in the Hague, held in March 2000. A joint statement to the Ministerial Conference on Water Security was issued by the CEO panel, consisting of several F&D companies' CEOs. The statement describes the continuing contribution that business and industry can make and the role they foresee in working to solve worldwide water issues.

The key components of the statement include water supply and allocation, use, quality protection and developing institutions for the management of water. Improvements in these areas should be achieved through increased public awareness, knowledge and technology sharing and partnerships.

The CEO panel for the third World Water Forum to be held in 2003 has selected four themes for joint initiatives and projects between members, namely, promoting sustainable water use in agriculture, creating awareness, participating in integrated water resources management and finance.

Agriculture remains the largest single user of water. Improving irrigation and reducing the impact of agricultural activities on water sources must be given a high priority. The F&D industry expects to be able to contribute to improvements in agricultural methods through the expansion of sustainable agriculture initiatives.

The F&D industry will work to minimise the impact of its own operations and will work with suppliers, consumers and society as whole to reduce the impacts up and downstream from their operations. Important components include educational programmes on water conservation to create widespread awareness of the potential water crisis and the solutions available.

6.2 Energy management

Energy is necessary for all food processing operations. Innovation in energy generation and use will be increasingly important in the

future in light of the obvious need for growth in the sector to help meet the needs of the world's population and decrease the numbers of people with inadequate access to food.

While a lot has been done to improve energy utilisation, there remain challenges in order to adequately address issues of diminishing resources, greenhouse gas and other air emissions and energy availability.

Improvements in these areas can only be accomplished in partnership with other key stakeholders such as equipment, raw material, energy and transport suppliers, retailers and governments. The F&D industry is in a good position to apply new and existing technologies that have the potential to reduce climate impact. These include for example using biofuels, renewable energy sources, and converting waste to energy. The F&D industry is committed to, and recognises the potential benefits of, implementing international and national programmes, such as the Kyoto Protocol, which include flexibility in applying these technologies.

Innovation in food processing techniques will also be an important contributor as well as continuous efforts to improve eco-efficiency. R&D programmes will have the opportunity to contribute in finding new and innovative techniques for food processing and preparation – both by industry and in-home or at the point of consumption.

7 Biodiversity

Biological diversity, or biodiversity, encompasses both the diversity of species and genetic differences within each species. It has long been realised that biodiversity carries significant value, both intrinsic and utilitarian via its ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values.

For the F&D industry, biodiversity represents a continuing source of raw materials, from undiscovered or unused plant and animal species to the use of wild varieties as a genetic pool to breed better commercial varieties. In addition, biodiversity plays a significant role in agricultural systems via nutrient cycling, pest and disease regulation, pollination, watershed protection, erosion control and climate regulation.

However, a wide range of activities from climate change to pollution and habitat destruction are threatening the current diversity of species. This threat has been widely recognised at an international level by a number of initiatives such as the IUCN Red List of Endangered species and the International Convention on Biological Diversity (ICBD, see http://www.biodiv.org).

Agricultural biological diversity includes all components of biological diversity of relevance to food and agriculture. The ICBD *'recognises the contribution of farmers, indigenous and local communities to the conservation and sustainable use of agricultural biodiversity and the importance of agricultural biodiversity to their livelihoods, emphasises the importance of their participation in the implementation of the programme of work, and recognises the need for incentives and support for capacity-building and information exchange to benefit farmers, indigenous and local communities'.*

To play its role in ensuring the protection of biodiversity, the main challenge for the F&D industry is to encourage primary producers to take measures to protect biodiversity at three levels:

- crop genetic diversity,
- species diversity at farm level,
- habitat diversity.

With regard to crop genetic diversity, the main issue is the number of genetic varieties used for crop production, particularly for staple food

crops such as wheat and rice. For example, in India farmers used to grow more than 30,000 rice varieties, whereas now 75% of rice production comes from only ten varieties.

Maintaining and enhancing species diversity at farm level involves a move away from the monocultures which have become a common feature of modern farming. Recognition of this factor has seen the re-introduction and promotion of measures such as mixed cropping, intercropping and crop-rotation. In addition to preserving biodiversity, these methods can reduce dependence on external inputs such as synthetic fertilizers and pesticides, but they require in-depth knowledge of how to optimise such production systems.

Maintaining biodiversity, both via genetic variation within crops and by growing a range of crops, can be an important risk reduction strategy in variable climates subject to pests and drought and where economic prices for crops may fluctuate significantly. In these situations the aim of maximising yield is superseded by the need to guard against failure, resulting in a more modest, but guaranteed yield and hence income.

The preservation of habitat diversity is critical to the survival of many individual plant and animal species. Such habitats can be natural (like rainforests, which contain an estimated 90% of all species on earth), or man-made (for example agricultural habitats such as managed grasslands and moorlands) which require active management to maintain the range of insects and wildlife.

The F&D industry has a responsibility to ensure that the biological resources which form their raw materials are used in a sustainable manner and that the benefits arising from their use are shared equitably. Both of these factors remain key challenges for the industry over the next decade.

7.1 Promoting sustainable practices from farm to table

7.1.1 Sustainable agriculture

As described above (see sections on raw materials and biodiversity), the promotion of sustainable agriculture is a major challenge for the F&D industry. The industry is generally not involved in the production of its raw materials, however it can have an influence through partnership with different stakeholders along the food supply chain.

The issues to be considered are numerous and complex, and include food supply chain and traceability, food quality and safety, animal welfare, environment protection, energy consumption, biodiversity, farmers' income and social aspects.

In some parts of the world, agricultural policy schemes, designed to ensure food security, are the dominant factor in determining which crops are grown and how. The incorporation of environmental concerns and policy objectives in such schemes is a challenge for the years to come.

Agriculture has a strong impact on natural resources. Sustainable agriculture principles and practices need to be implemented

progressively, according to the specificity of each food supply chain in the context of different production systems and countries. This will require addressing issues such as water shortages, greenhouse gas emissions, use of fertilizers and pesticides, and biodiversity.

The F&D industry puts a high value on consumer trust. To maintain this trust, consumers need to be kept informed of the ongoing changes. Confusion in the market through the proliferation of logos and certification schemes needs to be avoided. This challenge should be approached through improved communication.

The Rio+10 process is a significant opportunity for numerous companies to combine their efforts towards this objective, namely through the Sustainable Agriculture Initiative that is being launched by several large international food companies.

7.2 Sustainability and trade policy

The objectives of sustainable development and environmental protection are stated in the preamble to the 1994 Marrakech Agreement establishing the WTO. Negotiations on environmental issues are part of the new WTO work programme.

The WTO has emerged as a vital institution of global governance whose primary function is to guarantee the 'rule of law' in international trade relations. Through successive rounds of trade negotiations, governments have agreed to liberalise their trade regimes on a non-discriminatory basis and to define commonly accepted rules to govern trade relations, including those for agri-food products.

International trade in food products is part of the process of globalisation and economic growth. Through international trade, the world's economic actors co-operate to meet the needs of the world's consumers. There is a widespread consensus among academics that trade openness reinforces economic growth and that where countries trade more they tend to grow more rapidly.

However, sustainable trade will require a comprehensive policy based on national actions of a non-trade nature, to ensure that production does not harm the environment, or endanger human health and safety. International bodies, such as Codex, OIE, ISO and ILO, have started and continue to play a significant role in setting internationally agreed codes and standards. However, any standard needs to be developed with the broad participation of all partner countries. For developing countries, the challenge is to overcome resource problems which prevent effective involvement in international processes and to implement internationally agreed rules at the national level.

7.3 Improving communication and information in the F&D industry

Among the challenges the industry has to face over the next ten years, the ability to communicate its achievements, remains an area for progress. This report is certainly a first global, concrete contribution in that sense. We cannot, however, pretend that this report is exhaustive, whilst it presents case studies and examples of achievements, consolidated statistics and data at the global level are simply not available, an area for future work.

Better communication and transparent information are particularly important to raise awareness to contribute to education and also to maintain consumer confidence. In some regions, especially in Europe, this need is more present than ever. Public opinion regarding the European F&D industry has suffered over the past couple of years as a result of the debate over GMOs and food scares such as the 'mad cow disease' or Bovine Spongiform Encephalopathy (BSE) and dioxin cases.

It is of paramount importance to resolve this paradox of diminished consumer confidence in a period where food has never been safer.

Communication is therefore a strategic element to improve consumer perception of food safety.

We need to develop and improve tools of measurement and communication. In particular we need to elaborate performance indicators and set-up an overall environmental database. Sustainability reporting is also a means of giving a clear picture of the economic, environmental and social impacts of the F&D industry. It is especially needed in developing countries where little information is available.

Another key tool in addressing this challenge is increased stakeholder dialogue, particularly with consumers, both via consumer associations and directly via consumer focus groups. Such dialogue enables the F&D industry to identify and monitor changes in consumer concerns and to respond to these concerns in an open and effective manner. Consultation with all partners including environmental NGOs and retailers is also important and there is a need to foster an attitude in which constructive criticism is welcome, differences are openly discussed, and limitations are acknowledged by all parties.

To meet this serious challenge, a more global co-ordination in the F&D industry is essential. Such a co-ordination could result in an international organisation that would be the voice of the F&D industry on a wide range of common issues, interest and concern. Such an international body could facilitate the collection of data to be able to measure the sustainability performance of the F&D industry in developed and developing countries.

In this process, SMEs in particular need to be brought on board. This report illustrates that there are many and an ever increasing number of large companies that have already adopted sustainable practices in their day-to-day management and that environmental, social and ethical considerations are often part of their strategic decisions. However, SMEs, especially in low income regions, do not always have access to information pertaining to this approach. Therefore, it is essential to identify and implement various actions and initiatives, which will allow the F&D industry as a whole to improve its performance in a pro-active way.

Annexes
Annexe 1: Abbreviations

ABA	American Bakers Association
ABIA	Associação Brasileira das Industrias da Alimentação
ACRI	American Cocoa Research Institute
AFBTE	Association of Food, Beverage and Tobacco Employers
AFFI	American Frozen Food Institute
AFGC	Australian Food and Grocery Council
ANDI	Asociaciòn Nacional de Industriales Colombia
APEC	Asia Pacific Economic Co-operation
ASKINDO	Indonesian Cocoa Association
BCCCA	Biscuit, Cake, Chocolate and Confectionery Alliance of the United Kingdom
CAOBISCO	Association of the Chocolate, Biscuit and Confectionery Industries of the EU
CEFS	European Committee of Sugar Manufacturers
CFRH	Complete, frequent, regular harvesting
CIAA	Confederation of the food and drink industries of the EU
COD	Chemical oxygen demand
CRIG	Cocoa Research Institute of Ghana
CD	Canadian dollars
ECR	Efficient Consumer Response Europe project
EPI	Environmental performance indicator
EU	European Union
FAO	Food & Agriculture Organisation of the United Nations
FAOSTAT	FAO statistical data
F&D	Food and drink
FCPMC	Food and Consumer Products Manufacturers of Canada
FDF	Food & Drink Federation (United Kingdom)
FEVIA	Belgian Federation of Food Industry
FIAL	Fédération des Industries Alimentaires Suisses
GDP	Gross Domestic Product
GHG	Greenhouse gases
GHP	Good hygiene practices
GMP	Good manufacturing practices
HACCP	Hazard analysis critical control point
HFC	Hydrofluorocarbons
hl	Hectolitres
JAFIC	Japan Food Industry Center
ICD	Industry Council for Development
ICO	International Coffee Organisation
IDF	International Dairy Federation
IDFA	International Dairy Foods Association
ILO	International Labour Organisation
ILSI	International Life Sciences Institute
IPM	Integrated pest management
ISO	International Organization for Standardization

LCA	Life cycle analysis
m	million
mt	million tonnes (metric unless indicated otherwise)
MSC	Marine Stewardship Council
NACM	United Kingdom National Association of Cider Makers
NFPA	National Food Processors Association
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
OIE	International Office of Epizootics
PBE	Philippine Business for the Environment
PET	Polyethylene terephtalate
PVC	Polyvinyl chloride
SALT	Sloping agricultural land technology
SMEs	Small and medium-sized enterprises
SOFOFA	Federation of Chilean Industry
STCP	Sustainable Tree Crops Programme
USAID	United States Agency for International Development
USD	United States dollars
VOC	Volatile organic compounds
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organization
WTO	World Trade Organisation
WSSD	World Summit on Sustainable Development

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UNEP contribution to the World Summit on Sustainable Development

The mission of the United Nations Environment Programme (UNEP) is to provide leadership and encourage partnerships in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. **The UNEP Division of Technology, Industry and Economics (DTIE)** contributes to the UNEP mission by encouraging decision-makers in government, business, and industry develop and adopt policies, strategies and practices that are cleaner and safer, make efficient use of natural resources, ensure adequate management of chemicals, incorporate environmental costs, and reduce pollution and risks for humans and the environment.

This report is part of a series facilitated by UNEP DTIE as a contribution to the World Summit on Sustainable Development. UNEP DTIE provided a report outline based on Agenda 21 to interested industrial sectors and co-ordinated a consultation process with relevant stakeholders. In turn, participating industry sectors committed themselves to producing an honest account of performance against sustainability goals.

The full set of reports is available from UNEP DTIE's web site (http://www.uneptie.org/wssd/), which gives further details on the process and the organisations that made it possible. The following is a list of related outputs from this process, all of which are available from UNEP both in electronic version and hardcopy:

- industry sectoral reports, including
  - accounting
  - advertising
  - aluminium
  - automotive
  - aviation
  - chemicals
  - coal
  - construction
  - consulting engineering
  - electricity
  - fertilizer
  - finance and insurance
  - food and drink
  - information and communications technology
  - iron and steel
  - oil and gas
  - railways
  - refrigeration
  - road transport
  - tourism
  - waste management
  - water management
- a compilation of executive summaries of the industry sectoral reports above;
- an overview report by UNEP DTIE;
- a CD-ROM including all of the above documents.

UNEP DTIE is also contributing the following additional products:
- a joint WBCSD/WRI/UNEP publication entitled *Tomorrow's Markets: Global Trends and Their Implications for Business*, presenting the imperative for sustainable business practices;
- a joint WB/UNEP report on innovative finance for sustainability, which highlights new and effective financial mechanisms to address pressing environmental, social and developmental issues;
- two extraordinary issues of UNEP DTIE's quarterly *Industry and Environment* review, addressing key regional industry issues and the broader sustainable development agenda.

More generally, UNEP will be contributing to the World Summit on Sustainable Development with various other products, including:
- the Global Environmental Outlook 3 (GEO 3), UNEP's third state of the environment assessment report;
- a special issue of UNEP's *Our Planet* magazine for World Environment Day, with a focus on the International Year of Mountains;
- the UNEP photobook *Focus on Your World*, with the best images from the Third International Photographic Competition on the Environment.

Sustainability profile of the Food and Drink industry

• Achievements

- The F&D industry has experienced a steady and robust economic growth and has become a major contributor to local, national and regional economies and is one of the world's largest employers.
- The F&D industry has introduced eco-efficiency improvements throughout the food supply chain.
- Significant contributions have been made to society at large by helping to provide more and more people with safe, high-quality food products.

• Unfinished business

- The availability, quality and safety of the food supply will continue to remain a high priority for the F&D industry.
- As part of its focus on the continuous improvement process, the F&D industry will ensure progress in resource management, particularly for water and energy.
- Increased dialogue with all partners in the food supply chain will be pursued to identify concerns and to respond to them in an open, effective manner.

• Future challenges and possible commitments

- Better global co-ordination needs to be developed within the F&D industry in order to share best practices and to facilitate progress on sustainability.
- The F&D industry should take an active role in identifying, developing and facilitating acceptance of emerging technologies that will benefit consumers and the environment.
- Sustainable agricultural practices need to be fully supported so that they become increasingly systematic and globally widespread.

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