

MAKING SENSE OF RISK



March 2004

EXECUTIVE SUMMARY

The key challenge is making sense of risk

This report examines the debate on risk communication from an industry perspective. Making sense of risk is a key challenge facing governments, industry, NGOs and consumers. Our industry in particular daily faces the challenge of putting risk into perspective and demonstrating the difference between risk and hazard.

Today we are facing a crisis of confidence in society's selected scientific experts. We have seen the end of an age of deference where we instinctively trusted experts to tell us the truth. At the same time, in an increasingly connected society where there is uncontrolled spread of information via the Internet, we are more conscious of the everyday risks we face to our health and happiness.

We do not face more everyday dangers than ever before: as a first world nation we are safer and healthier than at any time in our history. Therefore, the debate about risk has to be focused on communication; the challenge we face is to help the public make sense of risk.

Collective responsibility to improve consumer confidence

For our industry, the preoccupation with risk can quickly manifest itself in a lack of confidence in our products and their ingredients. There must be collective responsibility taken by industry scientists, government and the media to improve consumer confidence. Ultimately, consumers do not expect to understand fully the science behind the products they consume every day; they want to be able to delegate choices to brands, manufacturers and retailers to retain their trust in those choices.

Too often, those in authority incline to sit on the fence - in fear of being attacked for not giving a balanced view, i.e. the consumers' view. But our industry can only hope to defend trust and authority in good science and scientific experts through a balance in our risk communication. Yes, it should be open and transparent but there should also be a balance of challenging perceptions and giving guidance in clear, intelligible language. Throughout the supply chain, there has to be collective responsibility to speak with an authoritative voice so as to dismiss 'scares' based on incorrect information.

The crucial role for the media

It has been shown that consumers are fairly sceptical when it comes to what they read or see in the press. However, the media is undoubtedly where most ideas enter the popular consciousness and is certainly where people turn for information in the midst of a crisis or scare. The media is often attacked for its sensationalist reporting of health scares where the actual risk is relatively small or unproven. It is too easy to focus the blame on journalists. This paper looks at measures which need to be taken to achieve mutual understanding. Both sides must take responsibility for finding appropriate language and ways of communicating between science and industry and the media.

The costs of a fearful society

Risk is inherent in any society. The concern is that by not tackling the risk debate we face serious future consequences. Questioning the ability of science to improve our lives will be damaging and leads to resistance to innovation; and worrying about the wrong risks has its own costs and leads to taking the wrong action.

Ultimately, this is a complex debate that has relevance across almost all industries. It is one in which we all need to engage in order to avoid a future where people live in fear of safe everyday products.



A handwritten signature in black ink, appearing to read 'Chris Flower', written in a cursive style.

Dr Chris Flower *MSc PhD CBiol MIBiol*
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INTRODUCTION

“The subject of risk is beginning to come of age.”

David Byrne, European Commissioner for Health and Consumer Protection

This is a debate about what has been called the ‘worry society’. Risk has become a preoccupation according to many commentators, evidenced by stories constantly in the media about the dangers of modern life- from health or environmental scares to fears about crime or the dangers of travel.

From the perspective of policy makers and scientists, the debate is taking place against a backdrop of scientific developments directly affecting consumers (such as in the fields of biotechnology and genetics) and the changing EU legislative agenda, especially regulation surrounding chemicals.

The Cosmetic, Toiletry and Perfumery Association (CTPA) has authored this paper to provide fresh insight from the industry’s perspective. ‘Making sense of risk’ is a key challenge facing governments, industry, NGOs and consumers. The CTPA represents a thriving cosmetic, toiletry and perfumery industry. On a daily basis it makes the link between science and consumers. As such it is on the front line of the risk debate. Our industry faces the challenge to put risk into perspective and demonstrate the difference between risk and hazard.

Debate on risk communication amongst policy makers in particular has tended to focus on the need to involve consumers. There is a sense that historically governments and companies have been reluctant to provide sufficient information or engage in two-way dialogue, leaving consumers without the means to make sense of the risks they face in everyday life.

We intend to show that this is a simplistic view of consumer engagement. In today's complicated and time pressured society people do not expect to have all the facts or be involved in every decision of personal risk. They need to be able to delegate risk assessment to trusted institutions. We believe the answer is not to provide more information, but to take responsibility for better communication. This means finding new ways of translating science into clear advice, while having the boldness to be challenging and authoritative in order to win much needed trust.

In particular we set out to address:

- Why now?
- The risk communication challenges and the absence of trust in 'experts'
- The specific challenges of our sector
- The role of the media
- The long-term consequences of failing to engage in the 'risk debate'.



CHAPTER ONE – THE FRIGHTENED SOCIETY

Obsessed by risk, are we scaring ourselves to death?

“How extraordinary! The richest, longest-lived, best protected, most resourceful civilisation, with the highest degree of insight into its own technology, is on its way to becoming the most frightened.”

Aaron Wildavsky, Political Scientist

Today we are facing a crisis of confidence in society’s selected scientific experts. At the same time we are more conscious of the everyday risks we face to our health and happiness. This is demonstrated at one end of the spectrum by high profile health scares like GM foods, BSE and MMR, through to scientific studies we hear quoted daily. One morning we are told not to drink coffee (caffeine is dangerous) or red wine (can cause cancer). The next day we read that caffeine helps our memory and concentration while red wine is shown to prevent heart disease. Why has society become so concerned with risks, so obviously and repeatedly exaggerated?

Science and technology are increasingly complex

It can be argued that the answer lies in the new heights of complexity reached by science and technology. People are scared by the pace of change and worried that we now take risks as a society where the long-term consequences are beyond current scientific expertise.

This is only part of the answer. For centuries society has broadly believed that the potential benefits of scientific progress outweighed possible risk. As a first world nation we are safer and healthier than at any time in our history but more worried about our health than ever. It is true that scientific developments are fast moving and complex. But why do we not accept that there will be much we do not understand and place our trust in experts and regulations imposed by governments?

The end of an age of deference

Much has been written about the end of an age of deference. We no longer instinctively trust experts to tell us the truth – business leaders, MPs and journalists are trusted by less than a quarter of the population. Scientists on average are trusted by 64%, but this decreases to 48% when they are scientists working for industry.¹

It has also been suggested that as a post-industrial society our expectations have changed. We are now asked to apply intelligence in the workplace and the skills that are taught and encouraged are analytical as opposed to repetitive abilities. It follows that we will apply these skills outside as well- we will no longer hand over responsibility for risk management to others. We want to have the information to do it ourselves.

Connected society

Access to information plays a significant part in our attitude to risk. A combination of the constant bombardment of information in an increasingly connected society and an increasing willingness to question means there is often confusion about where to gather our information.

The Internet has been a powerful force in increasing the amount of information available to the public and the ability for anyone to post information for others to read. Information that spreads via the Internet is neither controlled nor validated, yet people attach a degree of credence to what they read on their computer screen. We live in a global village where rumour, allegation and falsehood has unprecedented circulation.

¹ MORI, Trust in Scientists 2001

The challenge of making sense of risk

These trends mean society is far more susceptible to preoccupation with negligible levels of actual risk. We worry about the immediate or most high profile risks rather than the most serious. Lung cancer, for example, is a much bigger killer than it was 50 years ago. It is believed to be caused almost entirely by smoking – and yet 1 in 4 of the population continues to smoke.² Most other types of cancer are declining, yet these are the ones more likely to be associated with high profile media scares.

Attitudes to risk depend on many different variables but there are two key factors which come into play:

1. Is the risk voluntary or involuntary?
2. Is it a known, observable risk, or unknown and unobservable?

Fear is dictating these two factors - as is media attention. For example, mobile phone radiation is involuntary (we are exposed with no choice) and unknown (we cannot see it and any effects would be long term). Compare that to a familiar risk taken by a rock climber who is experienced, chooses to do it and knows the risks. But the consequences of a single slip shows that familiarity doesn't necessarily mean safety.

A challenging climate

For our industry the preoccupation with risk can quickly manifest itself in a lack of confidence in our products or their ingredients. We do not face everyday dangers more today than ever before, so this climate is a product of global societal trends rather than scientific advancement itself. This means that the debate about risk has to be focused on communication; the challenge we face is to help the public make sense of risk.

² Centre for Disease Control, in H. Aaron Cohl, *Are We Scaring Ourselves to Death?* St Martin's Griffin, 1997

The Precautionary Principle

The precautionary principle is a symptom of the current climate of an obsession with risk. It is a challenge affecting our industry and others in helping the public make sense of risk – an understanding of it helps to place into context much of what we cover in the next chapter.

The principle argues for precautionary measures to be taken if any threat of harm is raised, even when a cause and effect relationship is not established scientifically. It perpetuates the idea that we are faced with many new, complex risks against which consumers need protection. The precautionary principle has been accused of specifically contributing to holding back scientific progress.

The precautionary principle has become deeply entrenched in our consciousness, however, and is likely to continue to form a major part of policy-making in the future. Rather than dismiss it, we should approach it as an opportunity. If all stakeholders take it on board and it is used in a sensible way it could help to restore public confidence in science. The key is getting the balance right: caution is sometimes wholly necessary, but at the same time we need to avoid 'scaring ourselves to death'.

CHAPTER TWO – COMMUNICATING RISK

The challenge of helping the public make sense of risk

This challenge has to start with the everyday choices consumers make about what they buy, what they eat, where they travel, what health and lifestyle choices they make. Everyone wants well-informed, empowered consumers. The need to involve consumers in open and transparent debates on risk is not in dispute. However, the overriding difficulty is what information to communicate and in what format.

Does an overload of information actually contribute to an increasing lack of trust? We are seeing attempts to find answers by being inclusive of the views of academics, industrialist, politicians and the public, and this is challenging the process of scientific enquiry itself. Bill Durodié (risk expert at King's College London) is worried that "this suggests that all we need to understand the world better is simply more empirical information from disparate sources...

“Consumers don’t want to know about risk, they want to know about safety.”

Dr Angelika Tritscher, World Health Organisation

The ‘right to know’

As consumers, do we have ‘a right to know?’ Of course we have the right to expect open and honest communication. But it is not viable to involve consumers in every decision in which we have a stake. There is danger in an approach that bombards consumers with information whenever there is even the slightest scientific uncertainty, and this then only serves to fuel fear and doubt.

Significant expertise and experience are required to make sense of experimental outcomes and decide as to their meaning. It is this qualitative judgmental mode that is most at risk of being dissolved and lost today”.³

³ Institute of Ideas, Science: *Can we Trust the Experts*, Hodder & Stoughton, 2002

Trust is acquired by being authoritative and consistent as well as open and transparent. Attempting to be too inclusive will not re-inforce trust in good science but only add to confusion and doubt.

Involving consumers

Human behaviour depends as much on perception as fact. Therefore, risk communication cannot simply be about providing the facts. Perceptions – for example, about what scientific developments are ethically desirable - are a valid part of risk decision-making, alongside scientific evidence. Consumer groups argue “too often consumers’ fears are dismissed as ‘irrational’ or ‘ignorant’ when compared to the way that ‘experts’ measure risk.”⁴

The dangers occur when perception is allowed to dominate. There is a balance to be found where public opinion is taken into account but experts also take responsibility for challenging perceptions with scientific evidence.

Where should the information come from?

In the last chapter we looked at how trust in scientists has declined. We are quicker to question those once seen as authoritative figures, doubt their motivations and independence. In recent years we have seen the rise in influence of NGOs who position themselves as alternative scientists. New types of experts – consumer experts, environmental experts and single-issue campaigners – all play a greater role in decision-making.

Consumers naturally seek information from those without a ‘vested interest’. However, it is dangerous to make assumptions about which scientists have the most objective approach. Greenpeace has itself admitted that NGOs can sometimes be opportunistic.⁵ The findings of any scientific experiment may be portrayed as more serious than they actually are if the authors are competing for funding for further research.

⁴Sue Dibb, *Winning the Risk Game*, National Consumer Council, November 2003

⁵European Commission conference, *Risk Perception: Science, public debate and policy-making*, 4-5 December 2003

Taking responsibility for communicating risk

Ultimately consumers do not expect to understand the science behind the products they consume every day. They want to be able to delegate choices to brands or companies. Throughout the supply chain, there has to be collective responsibility to speak with an authoritative voice to dismiss 'scares' based on incorrect information and play more of an educative role to increase confidence in science.

There is a fine line between responding to consumers concerns and pandering to prejudices. For example, UK supermarkets are extremely swift in removing lines when there is even the slightest doubt over the safety of ingredients. In some cases this is wholly justified, but in others it may be an unnecessary response to a consumer scare. Retailers, in their unprecedented position of trust, need to work hard along with manufacturers to maintain consumer confidence in delegating choices.

There are two elements to this.

1. Inspire trust in the actual process of new product development or scientific advancement. Consumers lack a general knowledge of how science is regulated but nevertheless believe there is little regulation⁶. There needs to be better education of the way in which industries like the cosmetics industry are regulated and the stringent evaluation which all ingredients have to undergo.
2. Maintain trust in the products themselves. Companies need to demonstrate their confidence in the safety of products and in the science behind them. If people are looking for trust in the experts, it is essential that industry takes a leadership position. Experts should take responsibility for explaining science to the public but too often they are seen to 'include' the beliefs of their 'audience' on equal terms.⁷

⁶ Professor Robert Worcester, MORI, *Speech to the Chemicals Industry Association*, November 1999

⁷ Institute of Ideas, *Science: Can we Trust the Experts*, Hodder & Stoughton, 2002

Too often, those in authority incline to sit on the fence, in fear of being attacked for not giving a balanced view, i.e. the consumers' view. But our industry can only hope to defend trust and authority in good science and scientific experts through a balance in our risk communication. Yes, it should be open and transparent but there should also be a balance of challenging perceptions and giving guidance in clear, intelligible language. Where there is currently an environment of competition to win consumer trust, we would like to see greater collaboration between manufacturers, retailers, consumer groups and government to regain confidence in the 'experts' as a whole.



“The man who insists upon seeing with perfect clearness before he decides, never decides.”

Anon.

CHAPTER THREE – RISK VS HAZARD

The challenge for the chemicals industry

At the heart of this debate is the word 'chemical'. Almost more than any other, this is the word which people associate with risk which cannot be controlled or understood. The crucial distinction between a risk and a hazard is nowhere more pertinent than in the chemicals industry.

The words risk and hazard are often used interchangeably. The chemicals industry is working to demonstrate the crucial distinction: CEFIC (the European Chemical Industry Council) claims that "appreciation of the difference is fundamental to informed debate on the safety of chemical products and processes".

Risk = hazard x exposure

Risk requires there to be a hazard and exposure to that hazard. Risk is the chance that harm will actually occur. For example, a dangerous animal can be seen as a "hazard". When the animal is free, people in the surroundings are exposed to it. Consequently there is a risk that these people might be attacked. However, when the animal is closed in a cage, it remains 'hazardous' but there is no exposure to it; consequently, there is no risk. (CEFIC)

The fact that a substance possesses a toxic property does not make it poisonous. Salt, for example, is known to be toxic at high levels but consumption of a certain amount is essential for health.

The cosmetic, toiletry and perfumery industry faces a great deal of misunderstanding and misinterpretation surrounding its use of chemicals. For example, implying that a chemical is 'bad' whereas natural is 'good' is meaningless. A chemical is any substance made up of atoms and molecules whether synthetic (man-made) or of natural origin. Chemical does not mean the opposite of natural and there are plenty of unsafe natural chemicals.

*"All substances are poisonous: there are none that are not.
The dose alone differentiates a poison from remedy."*

(Paracelsus, 1493-1541)

All ingredients used in our industry have to meet stringent European regulations guaranteeing consumer protection and the well-being of industry employees. We use processes which involve safety margins – allowing for conditions where there is far higher exposure than in normal circumstances. For example, dibutyl phthalate was used in nail polish with a safety margin of 1,500. This means that to be dangerous a person would have to be exposed to 1,500 times more than the maximum normal use. This is a much higher safety margin than a lot of ‘safe’ substances. Yet this is one of the substances classified as ‘dangerous’ by EU legislation as part of a range which are said to have carcinogenic, mutagenic or reprotoxic properties. Therefore it was removed from use based on a potential hazard that would never pose a risk to human health.*

Many ‘scares’ about cosmetics ingredients are based on misunderstood or out-of-date information or research that has not been independently validated; others are factually incorrect. All prey upon the consumers’ lack of expert knowledge of the substances concerned.

As an example of misinterpretation consider ‘dihydrogen monoxide’. Also known as hydric acid, this colourless and odourless substance is used as an industrial solvent-coolant and in nuclear power plants. Its solid and vapour forms can cause burns and its liquid phase is the direct cause of many deaths each year. It is also found in cancerous growths, contributes to acid rain, and is ubiquitous in the environment. Surely this dangerous chemical needs to be severely controlled and regulated if not banned altogether? When presented with these facts, most people agree. This shows how the selective use of information can create worries and concerns even about such an essential and safe substance as water (H₂O).

Our specific challenge is to work to dispel some of the most common myths, to improve confidence in our testing and regulatory processes and to inspire confidence in the safety of products that are used by millions of people everyday.

* Updated July 2017 in digital reproduction

CHAPTER FOUR – ARE JOURNALISTS TO BLAME?

The role of the media in risk communication

Why does the media matter?

No paper on the subject of risk communication would be complete if it did not cover the significant role played by the media. In conveying risk messages to the public the media represents both a great opportunity and a significant challenge.

It has been shown that consumers are fairly sceptical when it comes to what they read or see in the press and certainly journalists regularly score badly in trust surveys. The National Consumer Council found that nearly two-thirds of people it surveyed agreed that “a lot of the information about risky products is exaggerated- it’s just scare-mongering.”⁸ However, the media is undoubtedly where most ideas enter the popular consciousness and is certainly where people turn for information in the midst of a crisis or scare. It shapes our views about what is socially acceptable or the ‘norm’ and it also has an influence, direct and indirect, on policy-makers.

Reporting concerns

The media is often attacked for its sensationalist reporting of health scares where the actual risk is relatively small or unproven. It is easy to blame journalists for stories where there is inaccuracy leading to misinterpretation. A more sensible approach to take is to strive for mutual understanding and for both sides to take responsibility for finding appropriate language and ways of communicating between science and industry and the media. There are some key concerns about the media’s handling of stories involving risk that both sides need to appreciate.

- Oversimplification of science or risk stories. There is an inevitable loss of complexity when a journalist is trying to provide information in a short TV broadcast or a readable newspaper article. It represents a constant struggle between the journalists’ need for black and white answers and the scientists who are unable to provide them.
- Handling of statistics about risk. In many cases statistics are printed without a context – such as a comparative risk or in cases of citing an increase, also citing the baseline of what the risk actually is.

⁸ Sue Dibb, *Winning the Risk Game*, National Consumer Council, November 2003

- Imbalance by not including enough expert opinions. Frequently stories are written based on a report or source that has not been independently verified by peer group scientists.

The media's perspective

In order to tackle these concerns, it is also important to fully appreciate the pressures and context in which journalists are working. Few journalists are trained scientists, even those covering health, science or environmental issues for national press. It is unrealistic for those in science and industry to expect them to sift through scientific and pseudoscientific research and present the story clearly if they do not have basic training in assessing scientific validity.

Journalists are also often faced with a lack of information or comment from experts when under strict time constraints. In order to achieve a balanced presentation of the arguments, they need to be given the right information in the right way. The National Consumer Council claims that for consumers, having no information causes the risk to seem more serious. "In today's 24 hour news culture, lack of information creates a vacuum that fuels rumour and speculation".⁹

The most effective response from industry and government scientists must be to improve communication of risk. This means using non-technical language, presenting information clearly and finding ways of explaining scientific processes to a lay audience. It means remembering that journalists are consumers too. It also means communicating constantly, especially in a crisis. It is crucial to fill any information void in order to retain trust and authority.

There are some indications that some sections of the media are beginning to tackle this issue as well. In 2003 the BBC drew up draft guidelines on risk communication. This includes a checklist for journalists with questions such as "How has the risk been measured? How big is the sample? Have you told the audience how to find more information? Have you given the audience information to put the risk in context? Will our reporting increase or decrease risks in society?"¹⁰ This is at least a step in the right direction in helping the public to make sense of risk.

The media does matter in our perceptions of risk and our actions as a consequence. There are many negative effects from imbalanced reporting, including people taking misguided preventative action or authorities focusing on the wrong risks. These will be discussed further in the final chapter.

⁹ Sue Dibb, *Winning the Risk Game*, National Consumer Council, November 2003

¹⁰ Roger Harrabin, Anna Coote & Jessica Allen, *Health in the News: Risk, reporting and media influence*, Kings Fund Discussion Paper, September 2003

CHAPTER FIVE – LOOKING AT LONG-TERM CONSEQUENCES

*“There are risks and costs to a programme of action.
But they are far less than the long-term risks and costs
of comfortable inaction.”*

John F Kennedy

*“There is a real danger that an anti-science agenda may
take root in European society leading to a society hampered
and restricted by a collective neurosis; lacking in self-confidence;
resistant to innovation and unwilling to embrace change.”*

David Byrne, European Commissioner for Health and Consumer Protection

Risk is inherent in any society. The concern is that by not tackling the risk debate we face serious future consequences. We can group these into three main themes.

1.The costs of a fearful society

There is a significant price to be paid in the rise of fear which goes beyond that of our industry. Damage will be done by questioning the ability of science to improve our lives and by becoming resistant to innovation, and there are costs to our actions as a result of worrying about the wrong risks.

Consider this illustration of the threat of child abduction. “In the year after Sarah Payne’s murder a survey by the NSPCC could not find a single case of a child abducted and murdered by a stranger and, largely because of better social services, child murders in general have halved since the 1970s” (Nick Ross, Crimewatch). However, the Guardian reported in September 2003 that “in the previous five years the proportion of overweight children aged 6-15 had increased by 7% and obese youngsters of the same age by 3.5%”. While the risk of being killed by a stranger is very low indeed, the risks of obesity associated with changes in lifestyle that see children kept indoors leading a sedentary life are far greater.



2. Misdirection of attention and resources

Pressure from a fearful public can also lead governments and companies wrongly directing resources in response to single incidents or scare stories. For example, investigating an industrial accident that has caused outrage because of a single death may mean spending thousands of pounds on a specific measure to prevent an unlikely repeat of the incident. Spending this money on more general health and safety improvements could prevent many more accidents.

There are also examples of scare stories that focus on a particular chemical causing it to be replaced with an alternative. In some cases this is simply replacing one unproven risk with another more unknown one. 'Knee-jerk' reactions will not necessarily reduce risk but simply change it.

3. Missing out on future benefits

This is a point made forcibly by Dr Helene Guldberg (a developmental psychologist) who claims that “history has shown us that, while scientific and technological progress may often introduce new risks, its general trajectory has been to reduce many other, more serious, risks. Examples are plentiful: including the development of vaccinations, organ transplantation, blood transfusion, the chlorination of drinking water, the use of pesticides, and much more.”¹¹

The precautionary principle has been accused of specifically contributing to holding back scientific progress. It demonstrates the approach those such as Dr Guldberg condemn. She claims we pay a heavy price for taking it on board “by missing out on future social benefits that are unimaginable to us today.”

¹¹ Helene Guldberg, *Challenging the precautionary principle*, Article from 'Spiked', 1 July 2003

*“Only those who risk going too far can possibly find out
how far one can go.”*

T S Eliot

CONCLUSION

This is a complex debate that has relevance across almost all industries and countries. We have identified some key areas for debate and crucial points for action. Ultimately we all need to engage with the risk debate to avoid a future where people live in fear of everyday products.

- There is a clear disconnect between science and society – where scientists have a responsibility to find a language to make themselves better understood to the lay public, including journalists. Clearer communication will also ensure that other experts, including NGOs, do not have a disproportionate influence.
- Contrary to the opinion of many involved in the debate, we believe it is not viable to try to ensure that consumers know all the facts. They cannot be their own ‘risk managers’ on every issue. The complexity of modern living requires people to be able to delegate their decisions.
- Generally, when there is public opposition to scientific developments such as GM foods, this is not based on the public’s lack of knowledge of the scientific detail. It is because they have too much information from disparate sources and do not trust the experts.
- Thus governments and companies should recognise consumer concerns as valid regardless of whether they are based on all the information and fully balanced by all points of view. Not to do so suggests that providing more information is all that is needed.
- We need better co-ordination between experts and plain English explanations rather than more information and more involvement. We would like to see government, industry and academic scientists taking responsibility for helping consumers make sense of risk – and this means putting it in perspective, explaining the processes involved and ultimately taking the opportunity to provide authoritative and expert advice.

FURTHER READING

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About the CTPA

The CTPA is the trade association for the UK cosmetic, toiletry and perfumery industry. Members include companies of all sizes involved in sourcing of ingredients, manufacturing, packaging, labelling, distribution and retail.

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