

**Corporate Social Responsibility – The
Environmental Case**

By

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Declaration

Title: Corporate Social Responsibility – The Environmental Case

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This thesis is presented in partial fulfilment of the requirements for the degree of Master of Science in Environmental Protection.

It is entirely my own work and has not been submitted to any other university or higher education institution, or for any other academic award in this institute.

Where use has been made of the work of other people it has been fully acknowledged and fully referenced.

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Abstract

This thesis documents the research, design, development and implementation of the environmental Corporate Social Responsibility (CSR) reporting requirements for food and drinks sector companies. The research findings have been successfully implemented at a case study firm, Glanbia Ingredients, Ballyragget, Co. Kilkenny.

An extensive literature review of Corporate Social Responsibility and its drivers was undertaken and an approach to its implementation is presented. A review of the environmental drivers which encourage and often dictate a company's environmental responsibilities was conducted to determine an approach to environmental CSR. An overall picture of the case study company's current situation in respect of these drivers was then required. In order for CSR reporting to benefit a company, exposure to environmental risks must be minimised. A planned programme of CSR action points was then required to fill the gap which exists between the current position and the ultimate CSR reporting position. An outline of the approach required to prepare a company for CSR implementation and reporting is presented.

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Nomenclature

Abbreviation	Definition
ACCA	Association of Certified Chartered Accountants
AER	Annual Environmental Report
BAT	Best Available Technology
BITC	Business in the Community
BREF	Bat Reference Documents
CC	Corporate Citizenship
CCL	Climate Change Levy
CEO	Chief Executive Officer
CERES	Coalition for Environmental Economics
CGPP	Cleaner Greener Production Programme
CSR	Corporate Social Responsibility
DETE	Department of Enterprise Trade and Employment
EIRIS	Ethical Investment Research Service
EMP	Environmental Management Programme
EMS	Environmental Management System
EPA	Environmental Protection Agency
FTSE	Stock Exchange
GHG	Greenhouse Gas
GMO	Genetically Modified Organism
GRI	Global Reporting Initiative
HTML	Hyper Text Modified Language
IBEC	Irish Business Employers Confederation
KPI	Key Performance Indicator
LCA	Life Cycle Analysis
MORI	Market and Opinion Research International
NGO	Non Governmental Organisation
NO _x	Nitrous Oxides
NPO	Non Profit Organisation
OECD	Organisation of Economic Co-operation and Development

P.R.	Public Relations
PDF	Portable Document Format
PPP	Polluter Pays Principle
SAI	Social Accountability International
SME	Small to Medium sized Enterprise
SOx	Sulphur Oxides
SRI	Social Responsible Investing
WWTP	Waste Water Treatment Plant
WWW	World Wide Web

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Introduction

Corporate attitudes towards environmental issues have undergone a dramatic transformation in the last 40 years. At the turn of the 20th century, little attention was paid to the environmental impact of industrial activities. Pollution was accepted as a necessary by-product of economic development, as reflected in the popular slogan whereby noxious odours represented the 'smell of money' (Hart, S.L., 1999).

Carroll (1979) has identified Corporate Social Responsibility (CSR) as being one of the three critical dimensions of the broader concept of corporate social performance. Carroll suggests that organisations need to determine whether they have responsibility for their economic performance alone, or for other concerns as well. If they are to accept responsibility for other concerns, they need to decide what are the relevant issues of concern (e.g. natural environment, poverty, over consumption, etc.) and how they should address them (e.g. proactiveness vs. reactivity).

CSR stems from a growing consumer, regulatory and legislative perspective that companies cannot exist for profit alone and must conduct their business with due regard to their employees, their consumer, their communities and to the environment. The debate is particularly strong in the era post Enron (the energy provider), WorldComm (the communications provider), Andersen (the accounting firm), who have all seen their power recently decline due to allegations of social irresponsibility.

CSR activities have been used to address consumers' social concerns, create a favourable corporate image and develop a positive relationship with consumers and other stakeholders.

More than 300 global companies such as Dow, DuPont, IBM, NIKE, Shell and Timberland already pursue an integrated perspective of their operations based on 'people, planet, profit' approach by publishing environmental supplements to their financial reports (Amine, 2003).

With significant growth in CSR reporting senior managers often find it difficult to bridge the gap between a CSR strategy and a CSR implementation plan. This study aims to present a framework for the development of a CSR action plan for a large multi-site dairy processing industry focusing on the environmental aspects of CSR. The approach to development of the framework was to identify the environmental drivers of CSR, develop an approach to take these drivers into consideration and ultimately to produce an adaptable CSR implementation framework applicable to the food and drinks sector.

While it is recognised that the CSR strategy must consider all of the elements of social responsibility the scope of this project is limited to the environmental case for CSR.

This study includes detail of the systems, structures and measures that are necessary to implement an environmental CSR strategy and produce an environmental CSR report.

SECTION 1 Literature Review

1.1. What is CSR?

CSR can be defined as a company being a good citizen to all its stakeholders, including employees, suppliers, the local communities in which it operates, the local environment in which it is based, in fact, to everyone (Oram, 2003).

Mallen Baker (2003) describes CSR as the way in which a company manages the business process to produce an overall positive impact on society. This is further extended with the addition that a company needs to address two aspects of its operations: first, the quality of its management both in terms of people and processes and second, the nature of, and quantity of its impact on society in the various areas. This is indeed true as the public become more environmentally aware the latter become very critical in determining a corporation's success, although the first aspect still counts almost as equally as the latter (Mabuza, 2003).

The World Business Council for Sustainable Development has described CSR as *'the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workplace and their families as well as of the local community and society at large'*.

This means that CSR is not an optional 'add-on' to business core activities, but about the way in which businesses are managed and run on a day-to-day basis. Another way to conceptualise CSR is as a way to maximise the positive and minimise the negative impacts of business activity on society and the environment.

'We must first listen to what citizens' groups say they want and need in terms of quality of life, and hear them out without raising objections. In fact, we should look for outspoken and independent partners – the best kind to have. And we can help them through accurate and reliable reporting' (Rubens, 1972).

CSR essentially forces companies to consider equally the three tiers of sustainability i.e. social, economic and environmental. In the social sphere companies must first address the needs of their employees, in addition to the communities they must satisfy they also need to address:

- the expectations of their shareholders in generating more transparency in reporting functions,
- a more inclusive approach (or public participation) in the decisions affecting the future of the company.

In the environmental area companies must act responsibly ensuring least damage to the environment. CSR requires a proactive approach in dealing with environmental problems and impact areas. Basic elements of this include: ‘Cradle to Grave’ approach, mitigation of environmental impacts, eco-labelled products, innovative solutions for managing environmental impacts. Environmental CSR can be defined as “good housekeeping” through prevention of pollution and waste and efficient use of scarce resources. For many companies this new perspective is essential for their licence to operate and forms the basis for business principles and practices.

The fact that there is no common definition of CSR reflects the wide concept and multitude of issues which CSR entails. It gives companies and society the possibility to be creative and flexible in developing CSR policies.

1.2. CSR Drivers

A sustainable company can adopt three kinds of responsibility: economic, environmental and social. Corporate social responsibility is about integrating the issues of the workplace, human rights, the community and the marketplace into core business strategies. ‘The next big thing in brands is corporate social responsibility, it will be clever to say there is nothing different about our product or price, but we do behave well’ (The Economist, 2001). The increasing influence of companies on societies all over the world should go along with their own increasing responsibility and accountability (SER, 2001).

1.2.1. Legislation

(i) EU Policy

CSR is about voluntary business engagement, going over and above legislative requirements. Going beyond legislation implies respect for the law and compliance with existing applicable regulation. In this sense CSR is a complement to existing legislation. EU Policy to date has recognised the need for a voluntary approach to CSR. An EU strategy for promoting contribution to social and environmental progress, beyond basic legal obligations, was set out in the Commission’s July communication ‘Corporate Social Responsibility –A business contribution to sustainable development’ (COM(2002) 347, 2002). However, the EU’s Multi-Stakeholder Forum on CSR have yet to conclude on the need for mandatory EU CSR legislation.

(ii) Mandatory Reporting Requirement

A number of EU countries have introduced Mandatory Reporting requirements by national legislation e.g. Norway, France, Denmark, Sweden, and the Netherlands. In addition a number of governments have introduced ethical indices e.g. UK FTSE4Good and Dow Jones

Sustainability Index. These are described in detail in Section 1.2.1.1.6.2 and Section 1.2.1.1.6.3.

(iii) Corporate Reporting & Accounts

An EU Commission recommendation was published in May 2001 on the recognition, measurement and disclosure of environmental issues in the annual accounts and reports of companies. While it is not legally binding, a number of interested parties have made use of this recommendation e.g. Morley Fund Management, UK, believe that companies who do not have adequate safeguards in place to minimise any damaging effects of their business will be susceptible to reputational risk and fines from regulatory authorities which may lead to poorer financial return. All FTSE100 companies are required to publish a detailed environmental report and accounts. FTSE250 companies have lesser reporting requirements but over time will equal that of the FTSE100.

The expectation for an international food company to report on its environmental performance is significantly increased as a result of these non-mandatory reporting schemes.

(iv) IPPC Directive

As established activities have to be compliant with the directive by Oct 2007, most Irish IPC licenses are likely to require a review following its transposition into Irish law. IPPC licenses are to be determined having regard to the principle of Best Available Technology (BAT) which in turn is based on the BAT reference (BREF) documents being developed for each sector by the EU.

The licence covers emissions to air, water, waste management, noise, non-process water, monitoring, recording and reporting, emergency response and residuals management.

The challenge does not end with the licence conditions. It requires continuous improvement following an Environmental Management Programme (EMP) which sets objectives and targets agreed with the EPA on an annual basis.

IPC licences are reviewed at intervals of not less than 3 years and reviews are required as a result of BREF and the IPPC rollout. As a result of a licence review conditions can change, limits made more stringent, etc. Contravention of IPPC licence conditions may result in €3000 fine or 1 year imprisonment for the CEO. A conviction or indictment may result in €13,000,000 fine or 10 years imprisonment.

BAT Reference Documents (BREF's) inform the relevant decision makers about what may be technically and economically available to industry in order to improve that industry's environmental performance and consequently improve the whole environment. The Food & Drink BREF is in draft format and is expected to be published by December 2004. It will have serious implications in terms of what technologies/processes can be utilised to reach the highest environmental standards.

The Food & Drink BREF notes will define BAT technology for the industry involving raw material use, waste minimisation, waste and water management, cleaning, energy efficiency, process design/redesign, accidental releases, end of pipe treatment and abatement technology.

As companies are forced to improve their environmental performance CSR reporting can be used as a tool to publicly report on performance, to meet the reporting requirements of IPPC licensing and to increase a companies credibility rating in the eyes of the statutory authorities.

1.2.2. Community

Community relations management is a key requirement of any environmental management system. Companies who do not respond to the public on environmental issues as they arise often find themselves subjected to a continuous stream of complaints. Irish examples include Masonite where environmental complaints on odour were left unresolved and resulted in

locals taking successful high court action, followed by an EPA prosecution for odour nuisance. The EPA approved a remedial action plan with Masonite to make progress towards meeting its licence conditions. However the remedial action plan has led to serious community opposition. The Inland Waterways Association of Ireland now track and report to their members on Masonite's non-compliances with their IPC licence. As a result of an initial poor response by Masonite to the public they now find themselves under the watchful eye of local action groups and national community action groups.

The public are quick to respond to environmental instances utilizing the EPA to draw attention to the matter. 1900 complaints were made to the EPA in 2002.

The number of facilities about which the bulk of these complaints were made totalled 16. In addition the type of complaints generally fall into 1 of 2 main categories: noise and odour.

Reg. No.	Company	County	Class of Activity	Odour	Noise	Water	Air	Procedural	Misc	Total	% of Total
565	National By-Products	Tipperary	7.5 & 7.7	134	0	0	1	0	2	137	11%
238	Michell Ireland Ltd	Waterford	8.6	70	0	0	0	0	5	75	6%
225	John Ronan & Sons	Tipperary	8.6	35	4	8	0	1	9	57	5%
170	Kildare Chilling Company	Kildare	7.4	55	0	0	0	0	0	55	4%
586	Munster Proteins Ltd /a Waterford Proteins	Waterford	7.7	53	1	0	0	0	0	54	4%
404	Dairygold Co-Operative Society Ltd	Cork	7.2	19	27	0	0	0	3	49	4%
1	Smartply Europe Ltd	Waterford	7.28.1	10	10	0	13	0	6	39	3%
592	Premier Proteins (2000) Ltd	Galway	7.7	34	1	0	0	0	2	37	3%
411	James & Nuala Gleeson	Tipperary	6.2	31	0	0	0	0	0	31	2%
46	Castlemahon Food Products	Limerick	7.7	28	0	0	0	0	1	29	2%
473	SmithKline Beecham (Manufacturing) Ltd	Cork	5.6 & 11.1	24	2	0	0	0	0	26	2%
445	Heineken Ireland Ltd	Cork	7.3	0	25	0	0	0	0	25	2%
28	IFI-Marino Pt	Cork	5.4 & 5.5	12	11	0	1	0	0	25	2%
550	Anglo American Lisheen Mining Ltd	Tipperary	1.3	0	10	2	0	0	10	22	2%
53	ADM Ringaskiddy	Cork	2.2 & 5.3	16	4	0	0	0	1	21	2%
35	Aughinish Alumina Ltd	Limerick	1.2 & 2.2	8	0	0	10	0	3	21	2%

Figure 1: IPC Licensing Report (EPA, 2002)

The level of involvement the EPA choose to have in dealing with complaints is very dependent on the organizations ability to deal with its own relations with its neighbours. The table above from the EPA Report on Licensing and Control 2002 report is an outline of the IPC facilities receiving the highest number of complaints and are used as a compliance

assessment tool by the EPA. Following investigation of these cases the EPA are often left with no option but to enforce further compliance conditions & more stringent monitoring on the companies.

The Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters was adopted on 25th June 1998 in the Danish city of Aarhus and entered into force on 30th October 2001. It lays down the basic rules to promote citizens' involvement in environmental matters and enforcement of environmental law and consists of three pillars:

- Public right of access to environmental information
- Public right to participate in decision-making processes and
- Public access to justice for the public

This right of involvement of citizens in environmental matters strengthens the case for implementation of CSR by companies.

1.2.3. Media and Public Relations

Environmental disasters are high profile news. There are numerous examples of bad publicity as a result of poor environmental performance. Incidents as a result of negligence can lead to prosecutions, poor media coverage, executives being reprimanded and make future expansions very difficult. Such coverage in the corporate report would be viewed poorly in the eyes of investors. One Irish environmental disaster involving a large pharmaceutical firm received worldwide media attention. The following article is taken from Time magazine.

The MPA tale, in fact, gives disturbing new meaning to the term alimentary canal. It starts with the American pharma company Wyeth, which makes hormone-replacement pills at its plant Wyeth Medica, in Newbridge, south of Dublin. The process of sugarcoating these pills produces runoff water with sugar in it, and beginning in 1997 Wyeth paid Dublin-based waste-management firm Cara to get rid of it. Neither company will say how much they paid, but the sum was handsome enough to justify Cara shipping the sugar water to an incinerator in Denmark.

In 1999, Cara managing director Brendan Keane says Wyeth asked him whether there might be an equally economical solution that recycled the waste rather than incinerated it. "One of our contacts told us about Bioland, this company in Belgium that reprocessed sugar into lactic and citric acid," says Keane. Cara inspected the facility, found it "clean, tidy and well run," and contracted to send tankloads of sugar water across the Irish Sea and the Channel to the little town of Arendonk near the Dutch border. The companies might even have expected a little p.r. credit for recycling.

Perhaps the firms would have got it, if only they had stuck with unsullied sugar water. But in August 2000, according to both Wyeth and Cara, Bioland agreed to accept from them a new stream of waste sugar water known to be contaminated with MPA. There is still a lot of scrapping going on over who was at fault. Ireland's Environmental Protection Agency said last week that

Figure 2: One Sweet Mess, Graff (2002)

Even if incidents do not reach international media attention they are often reported on nationally. In 2002 Aughinish Alumina plant in Limerick received adverse publicity in the Irish media. The company was ordered to pay the maximum fine of €1,270 in connection with a toxic leak from its premises at Askeaton. The company was prosecuted by the Environmental Protection Agency over the leaking of over a half a million litres of an extremely alkaline substance into the Shannon estuary in July 2001.

1.2.4. Liability and Insurance

Not considering CSR as a strategy can be considered a liability. Many examples of environmental liabilities are evident, some more difficult to uncover than others. Beillo, (2003) reports on numerous recent examples of drivers for CSR based on damaging lawsuits from major U.S. multinationals. For example Honeywell were order to clean up chromium contamination in New Jersey with estimated costs of up to \$400 million. Monsanto are faced settlement costs of \$700million as a result of a chemical incident. Asbestos related liabilities

worldwide could total between \$200-\$275 billion. All of these examples are encouraging US securities and Exchange Commission, investors and industry groups to seriously consider environmental and social disclosure by companies.

An increasing number of financial institutions have started to demand social and environmental criteria (Harajono & Van Marrewijk, 2001).

Where a liability risk exists a company will require insurance. Investors will demand minimum exposure. Insurance inspectors will assess the management of the risks and where they fall short it will result in higher premiums.

With the rising costs of insurance, reducing risk is crucial to manage and control this spiralling cost. An effective environmental management system keeps the risk of an incident to a minimum (similar to that of a health and safety system). However, general site insurance will not cover negligence or gradual pollution. Retaining an insurer depends on having no incidents and upon IPPC compliance.

A draft EU directive imposing financial liability on firms for pollution clean-up and restoration was prepared in January 2002. The Commission says it's liability proposal is the first anywhere in Europe to envisage making polluters pay for damage to biodiversity.

In principle a CSR compliant company would accrue benefits of being certified in this way but not necessarily in a direct way. Where this would benefit the organisation would be in the broader sense, in terms of creating a favourable view in the eyes of the company's insurance underwriters. It would also assist in creating competition from other insurers in regard to relevant risks to be insured. Thirdly it would be expected to generate over a period of time a better claims experience which would in turn produce lower premiums under the relevant policy headings.

1.2.5. Business Strategy

Many companies have demonstrated that CSR is a business strategy that works. The following example illustrates this.

Example: Nike

In the early 1990's, appalled consumers left Nike products untouched on shop shelves when they found out the sports giant was employing children to make its shoes in illegal sweatshops in Indonesia. Nike, consumers decided, was a selfish and irresponsible company that put profits before the basic right of workers.

As a result of the pressure imposed on Nike by its consumers Nike management drew up a code of conduct to ensure all of its products would be made under ethical conditions. The rehabilitation of its image has not been an easy road and significant work remains to be completed (Mallen Baker, 2004).

Often enthusiasm for CSR is based on the assumption that customers are willingly to support actively good corporate citizens (e.g. Jones, 1997; Lorge 1999). However only limited research is actually available to support this claim (Brown and Dacin, 1997, Handelman and Arnold, 1999, Maigain et al., 1999). A survey conducted by Maingan and Ferrell in 2003 to determine the perception of US, French and German consumers of corporate social responsibility showed contrasting views from the US and 2 European countries. The US consumer perceived the achievement of economic performance as a lead objective of businesses while French and German consumers viewed economic achievements as second only to legal and ethical responsibilities.

1.2.6. Financial Performance

The idea that CSR can bring a return on investment has been reported by Husted (2003). The measurement of return on investment occurs at every level of operations and as such CSR should be no different. The cost implications associated with the different forms of governance, defined by Husted as: contributory, collaboration and internalisation, must be examined by companies considering CSR to determine the appropriate way to choose a governance structure and also ensure competitive advantage. A diagrammatical representation of these types of CSR governance structures is given below.

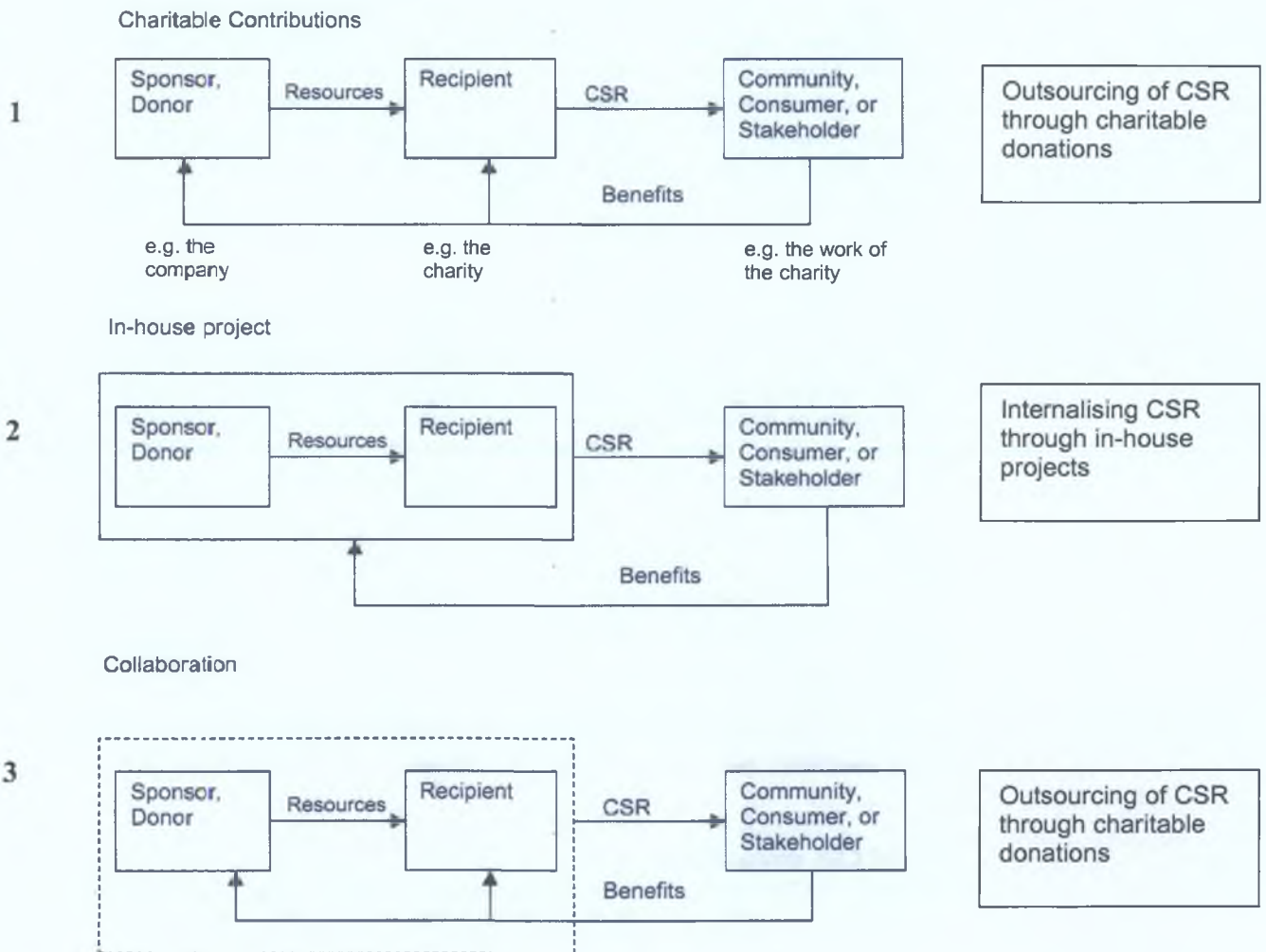


Figure 3: Types of CSR governance structures (Adapted from Husted, 2003)

1. Through charitable contributions, a company can direct resources to community and social organisation who are experts in the particular problem at hand. The company's involvement in the management of the project is usually minimal.
2. In-house projects require extensive company involvement in the planning, execution and evaluation of projects. Generally the company allocates financial and other resources to the project. In this case the donor and recipient are part of the one company. (e.g. the company and its project team). An example can be seen with Intel in Kildare who have a staff team involved in tree planting in the local community.
3. Collaborative projects involve a partnership between the firm and a non-profit organisation (NPO) in which the firm transfers resource to the NPO partner in order to carry out the CSR activities jointly. An example of this type of CSR can be seen in Benetton who collect used clothing at its stores, which is then distributed to the Third World via partnership organisations.

1.2.7. Corporate Reputation

CEO's are considerably more aware of the fragility of corporate reputation. For this reason Social Responsible Investing (SRI), CSR, corporate citizenship (CC) and the Triple P of Planet, People and Profit have been placed on the agenda's of management forums and corporate boardrooms.

1.2.8. Summary of CSR Drivers

Proactive environmental management is often required because regulatory compliance is not always sufficient to manage the negative environmental impacts of business operations effectively. Failure to manage these impacts raises 3 serious risks: the threat of increased

regulatory control by national governments and international organisations, financial risks caused by pollution and large resource use and damage to the corporate image (Rondinelli and Berry, 2000).

There are several specific drivers of CSR:

Direct Regulation	Fiscal Tools	Soft Intervention
<p>Integrated Pollution Prevention and Control (IPPC) emissions limits for factories: maximum emission levels negotiated site by site</p> <p>Producer responsibility regulations: e.g. packaging industry has to increase the amount of its product that ends up being recycled.</p> <p>WEEE for electrical products</p> <p>Renewables obligation: electricity supplier to source certain proportion from renewable sources</p> <p>Mandatory reporting requirements in Denmark, Sweden, The Netherlands, Norway and France</p>	<p>Landfill tax: levied on disposal company on all waste disposed, but cost passed back to producer</p> <p>Climate Change Levy (CCL): tax on all commercial (non-renewable) energy consumption</p> <p>Aggregates tax: on all virgin quarried aggregates (into force this year)</p>	<p>Making a corporate commitment: voluntary commitment to monitor certain outputs</p> <p>Voluntary agreement: e.g. reduce sulphur content of fuel, phase out the marketing of phosphate based detergents</p> <p>Environmental reporting</p> <p>Ethical Indices e.g. UK FTSE4Good Index, Dow Jones Sustainability Group Index</p> <p>Pressure from investors, governments, N.G.O's, consumers</p>

Figure 4: CSR Drivers

1.3. The Benefits of CSR

- Improved financial performance

Several research studies have shown a direct correlation between socially responsible business practices and positive financial performance:

- A 1997 DePaul University study found that companies with a defined corporate commitment to ethical principles do better financially (based on annual sales/revenues) than companies that don't.
- An 11-year Harvard university study found that 'stakeholder-balanced' companies showed four times the growth rate and eight times the employment growth when compared to companies that are shareholder-only focused.

- Reduced operating costs

An example of this can be seen in the draft EU Directive on eco-design of end use equipment which aims to allow manufacturers of these products to decide how to improve the environmental performance of their products throughout the life cycle at the design stage, rather than by fixing the environmental problems after they have occurred. Designing out the environmental problem could reduce operational costs in the long term for the firm. The EU's sustainable Development Strategy 2001 states that 'by promoting innovation, new technologies may be developed that use fewer natural resources, reduce pollution or risks to health and safety, and are cheaper than their predecessors (European Commission, 2001). By considering impacts, a company's actions can result in environmental, social and economic benefits. Construction firms, for example, reusing products on-site: reduces landfill, reduces community and noise disturbance of additional trucks bringing material to the site, reduces the environmental impact of damage caused by heavy truck wheels and reduces cost for the client of buying new material.

- Enhanced brand value and reputation

A good reputation is often very hard to build – and yet can be destroyed in less than a day. A strong reputation in environmental and social responsibility can help a company build trust with stakeholders. This needs to result from real practices and policies and an integrity towards the companies responsibilities. CSR reporting can lead to enhanced market penetration by more sustainable products and services.

- Long-term sustainability for the company and society

Research has shown that consumer not only want good and safe products, but they also want to know what they buy was produced in a socially and environmentally responsible manner. A CSR Europe/MORI study in 2000 showed that 70% of European consumers say that a company's commitment to CSR is important when buying a product and 1 in 5 would be willingly to pay more for products that are socially and environmentally responsible. Conversely, 1 in 6 shoppers frequently boycott (or buy) products because of the manufacturer's reputation (Aaronson, 2002).

- Better risk and crisis management

The more a company is committed to CSR, the less they are exposing themselves to business risk. This could be reputational risk following bad press e.g. the highly publicised 'Nike sweatshops', financial risks, or environmental risk. Fund Management companies are becoming more vocal and assertive about their own expectations regarding a company's evidence of responsibility in order to reduce risk.

- Increased worker commitment

A company's dedication to CSR can help to attract and retain employees. People want to work for a company that is in accordance with their own values and beliefs. Since Novo Nordisk launched their 'Values in Action' programme which aligns their business objectives with sustainable development, they have seen a 5% drop in staff turnover. 78% of employees

would rather work for an ethical and reputable company than receive a higher salary (Cherenson Group).

- Good relations with government and communities

The more a company shows it is committed to CSR by complying with and going beyond legislation the more lenient governments and regulators may be with the company. It can lead to more innovation-friendly environmental legislation. CSR companies may be given preferential treatment when applying for permits or permission to do something.

- Increased productivity and quality

Business for Social Responsibility is a membership organisation that helps companies improve their CSR learning, management and activities. They say 'Company efforts to improve working conditions, lessen environmental impacts or increase employee involvement in decision-making often lead to increased productivity and reduced error rate'. For example, companies that improve working condition and layout practices among their suppliers often experience a decrease in merchandise that is defective or can't be sold (Business for Social Responsibility, 2004).

1.4. CSR Concerns

While many studies in CSR show the positive effect of CSR activities on consumer's there are a few studies which examine cases when a CSR activity does not achieve the intended positive effects (Osterhus, 1997, Webb and Mohr, 1998, and Yoon, 2003).

Schefflein (2002) studied the use of regulatory drivers for CSR and the following views from a number of parties are evident.

Enterprises

- Insist on the voluntary and business-driver nature of CSR.
- Prefer global solutions.
- Argue that excessive standardisation would be counter-productive.
- Remind governments and multilateral organisation of their own responsibilities, especially outside Europe.

Trade Unions

- CSR does not replace regulation, CSR instruments can only be transitional.
- Globalisation reinforces the need for rules on responsibility.
- CSR must be embedded in a legislative or contractual framework.

NGOS

- Companies should make verifiable CSR commitments based on objective international standards, which are applied worldwide.
- CSR schemes require the involvement of all stakeholders.
- CSR needs legal regulation to control corporate action.

One of the main obstacles for responsible companies is the lack of skills to cope with the diversity of CSR. (EU Multi Stakeholder Forum on CSR, 2003).

One of the greatest risks for a company in getting involved with CSR is the requirement to disclose environmental risks, which may diminish shareholder value. The argument for

mandatory CSR reporting can be strengthened in this case in order to level the playing field. In addition to placing this information on the public arena there can also be legal implications. Companies involved in CSR have in fact sought legal advice at the formulating of the CSR strategy stage of the process. A legal tool was utilised in June 2003 by the non-decision of the United States Supreme Court in the case of *Kasky v. Nike*. There, the Court declined to rule on a California Supreme Court decision depriving Nike of a First Amendment protection for statements made in defense of attacks on alleged labor practices occurring in third-world production facilities. The implications of the *Kasky* case are potentially far-reaching. In the CSR arena, social and legal developments around the globe have increasingly motivated companies to publish reports for shareholders and stakeholders not merely about financial performance, but about social and environmental performance as well. In the wake of *Kasky*, companies are now faced with difficult decisions regarding how and what to communicate with their stakeholders. It is critical to determine first whether CSR reporting gives rise to enhanced legal risks. (Rudolph, 2004).

1.5. CSR Strategy

According to the EFQM Model (European Business Excellence Model) a number of activities are required to employ a CSR strategy. In doing so, some basic activities are considered essential, these are discussed below.

Leadership

CEO's are responsible for introducing new values and principles into business strategy. There are a number of international business leaders who have become pioneers by transforming their company into responsible ones, incorporating the triple bottom line approach into a business principle (Mowat, 2002). Examples include Ray Anderson (Interface), Izaak van Melle (Van Mello) and Yvon Chovinard (Patagonia). The triple bottom

line is seen as a tool for integrating sustainability into the business agenda. It concerns economic growth, environmental protection and social equity.

Strategy & Policy

An organisation needs a clear sense of its purpose, direction and desired future state. The chosen strategy must result in a win-win situation with consumers, suppliers and other stakeholders.

People Management and Resource Management

A number of other areas need to be addressed in a CSR strategy: process management, employee satisfaction, customer satisfaction, impact on society and financial and operational results (Hardjono & Van Marrewijk, 2001).

CSR is often regarded as an issue for large companies who have lots of resources. However the efforts of Small and Medium-sized Enterprises (SMEs) must also be recognised. SMEs often have CSR-like behaviour but do not use that terminology or publish reports as do some large companies. While SMEs may lack resources and expertise they can be affected by the behaviour of larger companies. For example, SME's could be involved as suppliers to larger CSR-firms and these firms could stimulate respect for CSR throughout their supply-chain.

The main function of an enterprise is to create value through producing goods and services that society demands, thereby generating profit for its owners and shareholders as well as welfare for society, particularly through an ongoing process of job creation. However, new social and market pressures are gradually leading to a change in the values and in the horizon of business activity. There is a growing perception among enterprises that sustainable business success and shareholder value cannot be achieved solely through maximising short-term profits, but instead through market-oriented yet responsible behaviour. Companies are aware that they can contribute to sustainable development by managing the operations in

such a way as to enhance economic growth and increase competitiveness whilst ensuring environmental protection and promoting social responsibility, including consumer interests.

1.6. Reporting Guidelines

Having reporting guidelines aids transparency, auditability of reported data and information, defines what is required in reporting for companies and allows comparability between reports. Reporting guidelines help an organisation describe the outcome of adopting and applying codes, policies and management systems.

The World Business Council for Sustainable Development have developed a 12-point tool which individual companies can use to help shape their corporate vision and programs (World Business Council for Sustainable Development).

In Ireland the most accessible reporting guidelines are produced by BITC Ireland – Guidelines for a Corporate Responsibility Report (BITC Ireland).

Enterprise Ireland also provide an Eco-Efficiency Analysis tool which aids a company in presenting its environmental performance or key performance indicators (Enterprise Ireland).

Three reporting guidelines with widespread use and commonly used as CSR indicators for companies: GRI, DJSI and FTSE4GOOD, are discussed in more detail below.

1.6.1. The Global Reporting Initiative

The Global Reporting initiative (GRI) was launched in 1997 as a joint initiative of the U.S. governmental organisation, Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environment Programme with the aim of enhancing the quality, rigour and utility of sustainability reporting. The initiative has representatives from business, non-governmental organisations (NGO's), accounting bodies, investor organisations and trade unions who work together to build a consensus around a set of reporting guidelines with the aim of achieving worldwide acceptance.

The first set of voluntary GRI sustainability reporting guidelines was released in a draft format in 1999 and officially in June 2000. These guidelines have since been revised and the 2002 guidelines are now the current working document. The next cycle of revision has already commenced indicating the rapidly changing and evolving state of sustainable reporting.

The guidelines are for voluntary use by organisations for reporting on the economic, environmental and social dimensions of their activities, products and services.

Organisations who wish to identify their report as prepared in accordance with the 2002 GRI Guidelines must meet five conditions:

1. Report on a list of elements covering: Vision and Strategy, Profile, Governance Structure and Management Systems
2. Include a GRI Content Index
3. Respond to a list of core indicators by either reporting on the indicator or explaining the reason for omission of each indicator
4. Ensure the report is consistent with the principles of transparency, inclusiveness, auditability, completeness, relevance, sustainability context, accuracy, neutrality, comparability, clarity and timeliness.
5. Include the following statement signed by the board or CEO: *“This report has been prepared in accordance with the 2002 GRI Guidelines. It represents a balanced and reasonable presentation of our organisation economic, environmental, and social performance.”*

The GRI Guidelines require the following core environmental indicators to be reported on:

Aspect	Core Indicators
Materials	Total materials use other than water, by type. % of materials used that are wastes from source external to the reporting organisation
Energy	Direct Energy use, segmented by primary source Indirect energy use
Water	Total water use
Biodiversity	Location and size of land owned, leased or managed in biodiversity-rich habitats Description of the major impacts on biodiversity associated with activities and/or products and services in terrestrial, freshwater and marine environments
Emissions, effluent, and waste	Greenhouse gas emissions Use and emissions of ozone-depleting substances NOx, SOx and other air emissions, by type Total waste by type and destination Significant discharges to water, by type Significant spills of chemicals, oils, and fuels in terms of total number and total volume
Suppliers	No core indicator
Products and services	Significant environmental impacts of principal products and services. % of the weight of products sold that is reclaimable at the end of the products' useful life and % that is actually reclaimed.
Compliance	Incidents of and fines for non-compliance with all applicable international declarations/conventions/treaties, and national, sub-national, regional, and local regulations associated with environmental issues
Transport	No core indicator
Overall	No core indicator

Figure 5: GRI core environmental indicators (GRI Guidelines)

Within the GRI framework performance indicators can be either quantitative or qualitative. It is recognised that quantitative or numerical measures offer many advantages but they may prove unreliable, incomplete, or ambiguous for measuring performance of certain issues. GRI considers qualitative indicators to be complementary and essential to presenting a complete picture on an organisations environmental performance.

Over 300 firms have issued sustainability reports drawing on the GRI guidelines. GRI aims at doubling this number to 600 by 2005 (Environment Daily 1507, 2003).

1.6.2. Dow Jones Sustainability Index

Sustainable Asset Management, a firm based in Switzerland, is responsible for research of the Dow Jones Sustainability Index. It classifies the companies in the Dow Jones Sustainability Index by industrial sector and then rates their performances in terms of social responsibility, environmental standards and business results. Dow Jones' Sustainability Index was launched in 1999 and comprises over 300 firms, rated the most sustainable 10% of the world's largest 2,500 corporations. In the 2003 sustainability index Toyota of Japan displaces Volkswagen of Germany as the leading – or most sustainable – firm in the automotive sector. Ireland-based CRH takes over from Lafarge of France as construction sector leader (Environment Daily 1510, 2003).

A defined set of criteria and weightings is used to assess the opportunities and risks deriving from economic, environmental and social developments for the eligible companies. A major source of information is the questionnaire which is completed by companies participating in the annual review. Further sources include company and third-party documents as well as personal contacts between the analysts and companies. The external verification by

PricewaterhouseCoopers ensures that the corporate sustainability assessments are completed in accordance with the defined rules.

1.6.3. FTSE4Good – UK

The FTSE4Good is an index developed by FTSE, a joint venture of the London Stock exchange and the Financial Times, in 2001. It brought out two socially responsible indices one with worldwide scope and the other for the European Union. Components are selected on the basis of ratings by the UK-based Ethical Investment Research Service (EIRIS). Independently defined and researched, FTSE4Good sets a global standard for socially responsible investment covering 3 areas: environmental sustainability, positive relationships with stakeholders and universal human rights.

The key features of the FTSE4Good index are:

1. Evolving selection criteria to reflect changes in globally accepted corporate responsibility standards and codes of conduct over time.
2. Challenging yet achievable criteria to encourage companies to strive to meet them.
3. Higher impact companies have to meet higher standards.
4. Transparent criteria and methodology.
5. Criteria based on respected codes and principles with new criteria subjected to a widespread consultation and approved by an independent advisory committee.

Companies are assigned a high, medium or low impact weighting according to their industry sector. The higher the environmental impact of the company's operations, the more stringent the inclusion criteria.

1.7. CSR in Ireland

In Ireland a small number of companies have taken up the challenge. The majority of these are international players with the agenda being driven from U.S. markets. Musgraves were the first Irish company to report on its environmental performance in the form of CSR reporting last year. The main guidelines in use in Ireland are the Business in the Community Ireland (BITC): Guidelines for a Corporate Responsibility Report.

The Irish BITC group are now part of CSR Europe, a Brussels-based business network of companies interested in exploring new ways to achieve profitability and business growth by placing CSR in the mainstream of business practice.

CSR Europe is funded by the European Commission and grew out of a social exclusion agreement for business signed in 1995 by Jacques Dectors, the former European Commission President, and Pdraig Flynn , the then Irish European Union Commissioner. There is a partner in every member state, encouraging companies to look at how they run their organisation and how it could be changed, working towards a European Business Olympics in 2005. Irelands' CSR partner is Business in the Community (BITC), founded in 2000. It is a non-profit organisation specialising in guidance on corporate responsibility issues.

Irish Companies with CSR reports	
Eagle Star life	Johnson & Johnson
Dublin Port Company	Diageo
Coillte	Musgraves
Waterford Crystal	IBM
National Irish Bank	ESB

Figure 5: Irish Companies with CSR reports

Bertie Ahern TD, Taoiseach of Ireland, believes that business organisations and their interests have never been more acutely aware of the role they have to play in the community and in society in general. In the foreword to the second Excellence report by the Campaign on European CSR Excellence 2003-2004, Mr. Aherne detailed the robustness of the business case for CSR. In his opinion by investing in CSR an organisation can reap both financial and social rewards while building sustainable businesses for the future. During the Irish EU Presidency (Jan –Jun 2004) Mr. Aherne wanted to move the CSR agenda forward as one of the means of achieving the goal for European economic and social reform set by the European Council at Lisbon in March 2000. The intention of this EU goal is to encourage the adoption of Corporate Social Responsibility policies and practices across the enlarged Europe to strengthen the competitive advantage of the European economy.

An initiative by Cork County Council in association with Macroom Town Council, the Couth Cork Enterprise Board and the Lee Valley Enterprise Board set up the Macroom Environmental Industrial Park, the first of its kind in the country. It aims to develop programmes to aid firms in the Park to pursue continuous improvement in environmental excellence in their activities and integrate business and environmental strategies (Cork County Council, 2004).

1.7.1. Initiatives of the Irish Government

The Sustainable Development Strategy of the Department of Enterprise, Trade and Employment 2003-2005 (DETE, 2002) was published in December 2002. Overall responsibility for CSR in Ireland currently lies with the Department of Community, Rural & Gaeltacht Affairs.

The strategy proposed 4 CSR objectives, these are outlined below.

1. Actively promote the adoption of good corporate practices by enterprises.

Under increasing pressure from NGOs and consumer groups, companies and sectors are increasingly adopting codes of conduct covering working conditions, investment decisions and environmental impacts, including those of their subcontractors and suppliers. Implementing CSR also needs new skills and develop more sustainable ways of working.

2. Continue to promote the implementation of sustainable trade policies and practices at national, E.U. and international level.

As trade forms a central/core element of enterprises relationships with their stakeholder, it is vital that trade and sustainable development policies and practices are mutually supportive. For example, trade can support new, ecologically sounds goods, services and technologies, or it can boost demand for unsustainable production.

3. Enhance the capacity of enterprises to move towards sustainable management principles and practices.

Factors influencing the degree to which enterprises move towards sustainable development include the size of the firm, its industrial sector, the existing body of environmental legislation etc.

4. Support sustainable consumer choices, through ensuring the provision of accurate and credible social and environmental information on products and services.

In order for consumers to make informed sustainable choices, they need reliable and accurate information regarding the availability of socially and environmentally sustainable products and services. Commonly agreed criteria regarding such social and environmental information and claims would also assist consumers in this regard.

Each of these objectives is supported by a number of actions. Support of the fourth CSR objective proposes to work with the NSAI, the Department of the Environment and Local Government and other relevant bodies to:

- promote applications for the EU Eco - label by Irish firms,
- explore the potential for further work on green consumerism, and
- support the European Commission work on guidelines for making and assessing environmental self-declared claims by producers or distributors.

Given that market capitalism is probably the most effective way for consumers to change corporate behaviour these actions do not go far to stimulate a response from industry.

Enterprise Ireland runs a support scheme providing financial and other support to Irish SMEs to conduct projects on environmentally conscious product design and manufacture. The EPA offer funding under the Cleaner Greener Production Programme (CGPP) for companies to improve their environmental performance by adapting or improving production processes in order to minimise negative impact on the environment and by changing the culture within organisations.

1.7.2. CSR Awards

CSR awards in place in Ireland are in short supply. The most prominent are: the Guinness Living Dublin Awards, Best Place to Work Ireland and ACCA environmental reporting awards. The Irish Business Employers Confederation (IBEC) also run annual environmental awards including ‘Managing for Sustainability’.

The ACCA Environmental Reporting Awards are organised by the Association of Certified Chartered Accountants, the largest global professional accountancy body who launched the worlds’ first environmental reporting scheme in the 1990s and continues to raise awareness of environmental and social reporting amongst the finance and business communities. In

Ireland, the scheme seeks to identify and reward innovative attempts to communicate corporate environmental performance, as well as social or full sustainability information disclosure.

1.8. CSR in the UK

Challenges from UK Prime Minister Tony Blair and other ministers for the UK FTSE350 to produce environmental reports have been put forward.

UK companies participate in the Business in the Community's 'Awards for Excellence', the Queen's award for Enterprise and the ACCA UK Awards for Sustainable Reporting. CSR performance is also measured by the FTSE4Good index, the Morley Sustainability Matrix and the Corporate Responsibility Index. The guidelines used by UK companies are the 'Business Impact Framework' and 'Good Corporation' (a global standard of corporate responsibility covering an organisation responsibility and fairness to its employers, suppliers, customers and providers of finance as well as its community and environmental impacts). Initiated and convened by Business in the Community, the Business Impact Review Group was formed in 1999 and comprises of twenty UK companies who make a commitment to measure themselves against a core set of CSR indicators which is then reported publicly.

In March 2000, the British Government became the first (and currently only) government to appoint a dedicated Minister for CSR. The Minister's tasks include making a business case for CSR and coordinate CSR policies across the government departments.

An annual report produced by SalterBaxter and the 'Context Group' reports on the degree of CSR reporting in UK companies. Since the first edition of their annual publication 'Directions' in 2001, CSR reporting by the FTSE250 has increased by nearly 150%, from 54 to 132 companies. The majority of the European top 50 and almost half of the US top 50 now produce a CSR report.

The UK Cooperative Bank has a thorough statement on its principles which is independently audited and is considered a leader in the field. The Body Shop likewise has a clear statement of principles.

The British government have also taken a bold CSR line in requiring by law UK pension trustees to disclose how they take account of social, environmental, and ethical factors in their investment decisions. It has resulted in a significant increase in FTSE firms to carry out triple bottom line reporting (social, environmental and profit reporting) (Aaronson, 2002).

1.9. CSR in Europe

European leaders have created a vision for the EU to become, by 2010, *'the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'* (The Lisbon Summit, 2000). The Lisbon Summit meeting in March 2000 also made a special appeal to *'companies' sense of social responsibility regarding best practices on lifelong learning, work organisation, equal opportunities, social inclusion and sustainable development'*, thus putting CSR on the political agenda of the EU. The following year European leaders endorsed the European strategy for Sustainable Development which was subsequently integrated into the Lisbon Strategy.

The Commission Communication of July 2002 entitled *'Corporate Social Responsibility: A Business Contribution to Sustainable Development'* (European Commission, 2002) forms the basis for the European Strategy on CSR. The communication sets up a European multi-stakeholder forum on CSR.

This forum on CSR was set up in October 2002 to provide a platform for discussion and mutual learning by the main stakeholder groups at European level. The forum brings together 19 EU representative organisations of employers, trade unions, business networks and civil society. The forum's two-fold objective is to:

1. improve knowledge about CSR and facilitate the exchange of good practice, and
2. explore the appropriateness of establishing common guiding principles for CSR practices and tools.

The forum process is currently in its final stage with a final report on its recommendations for further action due on 29th June 2004.

The communication is the result of a public debate launched by the Commission's Green Paper in July 2001 entitled *'promoting a European Framework for Corporate Social*

responsibility' (European Commission, 2001). The aims of this document were to launch a debate about the concept of CSR and to identify how to build a partnership for the development of a European framework for the promotion of CSR. Over 250 responses were received to this paper, half of which came from European enterprises.

In France there is a mandatory legal requirement for larger companies to issue an annual report on how they have implemented their CSR practices, alongside their annual financial reports. Law no.2001-240 of May 15th, 2001 on New Economic Regulations, article 116, in France compels publicly listed companies to report on the social and environmental consequences of their activities in their annual reports according to a range of indicators.

Elsewhere in Europe CSR remains a voluntary strategy, but many companies are now issuing similarly styled reports voluntarily.

A MORI poll carried out in September 2000 of 12,000 consumers across 12 European countries found that 70% of European consumers weigh a company's commitment to social responsibility when purchasing a good or service. One in five were prepared to pay more for products that are socially and environmentally responsible (Aaronson, 2002).

Finland host an annual award for the best social and environmental reports by not only companies, but also public bodies, non-governmental organisation, stock market analysts and opinion poll research organisations.

The Italian Ministry of Labour and Social Affairs decided to develop the project CSR-SC (Corporate Social Responsibility-Social Commitment) which aims at disseminating the culture of CSR and best practices among enterprises, defining indicators (standards); supporting Small to Medium sized Enterprises (SMEs) in developing CSR strategies; safeguarding consumers on the effectiveness of enterprises communication campaign on CSR.

CSR Organisations

A number of organisations conduct research and offer CSR services to industry. The following list document the most active in the CSR field namely;

- The Global Compact Initiative under the auspices of the United Nations.
 - World Economic Forum
 - International Business Leaders Forum
 - Business in the Community (BITC)
- 
- Dedicated specifically to assisting companies meet their CSR challenges
- CIAA – EU Food and Drinks Industry Association
 - CSR Europe
 - ACCA
 - IASB – International Accounting Standards Board
 - The Copenhagen Centre
 - IBLF- International Business Leader Forum
 - OECD
 - UN Global Compact

The European Business Campaign on Corporate Social Responsibility is a business response to the appeal for CSR of the European heads of States and Governments supported by the European Commission, Employment and Social Affairs Directorate General. It provides a forum for European multi-stakeholder interaction between the main stakeholders and the Commission as well as between the business world and its stakeholders. Essentially it is a learning organisation for participants to identify obstacles and focus on drivers and success factors.

1.10. Features of a CSR report

As a minimum environmental CSR reports contain information on the company's EMS, key performance indicators, goals and objectives and make a clear statement on its principles and practices in the environmental protection field.

1.10.1. Principle

The company must commit to striving to protect and restore the environment and promote sustainable development with product, processes, services and other activities. It must be committed to minimising the use of energy and natural resources and decreasing waste and harmful emissions. The company must integrate these considerations into day-to-day management decisions.

1.10.2. Practices

The following general list of practices, compiled from a review of the CSR guidelines in section 1.6, reflects the practices a CSR compliant company adapts.

1. The company mission includes and promotes the pursuit of 'sustainable development' defined by the UN World Commission on Environment and Development as 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs'.
2. The company strives for continuous improvement in the efficiency with which it uses all forms of energy and materials, in reducing its consumption of water and other natural resources; and in its emissions of hazardous substances.
3. The company creates explicit programs and mechanisms for monitoring its energy, water and materials use and corresponding emissions into the environment, and communicates to its stakeholders about its progress and strategies for improvement.

4. The company develops a company-wide Environmental Management System that translates its environmental mission and policy statements into an action plan, with objectives and procedures for evaluating progress.
5. The company includes environmental factors and audits in its performance evaluations systems for individuals and business units.
6. The company designs products, services, processes and facilities to minimise adverse environmental impacts.
7. Wherever possible, the company qualifies the environmental impacts of its products and services and makes continuous improvement in reducing or eliminating any adverse impacts throughout their entire life cycle.
8. The company is committed to using and producing recycled and recyclable materials, increasing the durability of products, and minimising packaging.
9. The company gives preference to purchasing environmentally superior products and office materials.
10. The company tries to transfer successful techniques and technologies to all its division and locations.
11. The company seeks out supplier, distributors, and business partners that meet equivalent environmental and social standards as the company sets for its own products and services.
12. The company share the savings from environmental impact reductions with employees.
13. The company offsets carbon emissions with equivalent carbon-fixing, such as tree-planting.

1.10.3. Environmental Management System (EMS)

Reporting on standards and detailed specifications of environmental management systems is commonly conducted. ISO14001 is the most widely used voluntary standard. In Europe EMAS is also a popular choice. A growing number of companies are developing their own specific environmental management systems, which deal only with the issues of concern to their operations e.g. Nestlé's EMS represents an organisational change within firms and a self-motivated effort at internalising environmental externalities by adapting management practices that integrate environmental and production decisions. This integration enables Nestle to identify opportunities for pollution reduction and enable the firm to make continuous improvements in production methods and environmental performance (Khanna and Anton, 2002).

1.10.4. Environmental Performance Indicators

The collecting of environmental performance data requires a sophisticated EMS for a large multi-national organisation and so detailed performance reporting remains low but steadily rising.

Common environmental indicators reported in CSR reports, identified from the case study CSR reports, are listed in the table below.

Overall energy consumption
Water usage
Quantity of waste produced by weight
Upheld cases of prosecution for environmental offences
CO2/greenhouse gas emissions
Other emissions (eg Ozone, Radiation, SOx, NOx etc)
Use of recycled material
Percentage of waste recycled
Net CO2 contribution made
Environmental impact over the supply chain
Environmental impact, benefits or costs, of companies core products and services

Figure 6: Environmental Performance Indicators

1.10.5. Goals and Targets

CSR compliant companies commit to reducing environmental impacts on an annual basis. Specific targets are set which are quantifiable e.g. 5% reduction in CO2 emissions from a base year 2000, of 20,000 tonnes. Reporting on target attainment is included in subsequent reporting years. Often the means of attainment is included in the form of case studies.

1.10.6. Environmental Policy

A copy of the company’s environmental policy is generally reproduced in the CSR report.

1.11. Reporting Formats

Traditionally paper based reporting formats were used. The issuing of sustainability reports by companies on the Internet is becoming increasingly established. There are many advantages to web-based reporting not least in distribution costs. Next Step Consulting and the ACCA produced a joint report called 'Environmental Social and Sustainability Reporting on the WWW: A Guide to Best Practice'. The report highlights some of the main benefits from web reporting including: the potential to improve public access to information on company performance and to offer an unlimited quantity of information allowing the user to download as much of the published material as they want. Typically two file formats are available – PDF and HTML (Scott and Jackson, 2002).

1.11.1. Annual Reports

CSR reporting should be timed to coincide, and possibly integrated, with other external reporting e.g. annual financial reports, quarterly earnings statements. Such timing reinforces the linkages between financial performance and social and environmental performance. Decisions regarding the frequency of reporting should take into account their expected use and feedback.

1.11.2. Web Based Reports

A wide variety of media is available to prepare and distribute reports, ranging from traditional printing to various multi-media technologies including the Internet and CD-ROMs. The availability of annual CSR reports as downloadable files (e.g. PDF's) is becoming increasingly popular.

1.11.3. Third Party Verification

Data disclosed in a company's CSR report requires an element of verification. Third party verification can give a report an independent seal of approval and can reassure the reader of the validity of the information. Unfortunately, many assurance statements written for CSR reports can be likened to financial audits statements: bland, non-committal and opaque (Line *et al*, 2002). The usual argument presented for this lack of clarity is the perceived liability of the assurance provider. For the assurance statement to have meaning, impact and to gain credibility among stakeholders, assurance providers need to openly challenge the client, and to make clear recommendation about how future reports can be improved.

Unilever can be considered a leader in this area. Their 1998 and 2000 report verification's were complete by Enviros a UK consultancy firm.

1.11.4. Inviting Feedback

Effective reporting is part of a broader dialogue between the reporting organisation and its stakeholders that should result in new actions by both parties. The frequency and medium of reporting may either enhance or detract from the progress of this dialogue. A company must be prepared to deal with the result of inviting feedback in order to maintain credibility in its reported CSR activities.

1.12. Case Studies

1.12.1. Case Study 1 Sun Coates

Sun Coates Ltd. an Irish ink manufacturing company had until recently, a poor relationship with the community near its factory on the banks of Liffey at Palmerstown, Co. Dublin. Locals complained about lorries driving down small roads in the area, but had no interaction with the firm's management. The company decided to improve its environmental record after the EPA issued it a licence that stipulated that it could produce no more than 4kg of emissions from its facility. The company experimented by putting lids on each of the vats where solvents were mixed. Immediately, this cut emissions by 70%, to less than 0.5kg. The company also saved money, because the lids meant 70% less of the solvent evaporated. All the money saved went back into environmental projects. The company now uses their environmental performance as a marketing tool. Sun Coates advises its 200 customers on how to get rid of their packaging waste and offers returnable containers and water based inks to reduce environmental hazards (O'Callaghan, 2003).

1.12.2. Case Study 2 Danone

Danone have produced a social and environmental responsibility report since 1998 and are considered leaders in the field. The Chairman's statement reflects on CSR; *'as economic concerns rather than social issues set the pace, the time has come to redefine roles and responsibilities of corporations. In this we must maintain a focus on people, ensuring that business and society can advance hand-in-hand'*.

Environmental CSR reporting by Danone involves 12 companies within the Danone group. (out of 30). The report includes a summary of progress in the following areas:

1. AER review

2. better measures of environmental quality
3. undertake programs for ISO14000 certification or similar
4. reduce packaging at source
5. assess the environmental impact of all new projects

These are based on the Danone environmental charter.

The report includes a verification statement by Pricewaterhouse Coopers as statement assurers. It also include a Dow Jones Sustainability Index Score.

Overall the 2001 report highlights much room for improvement in the environmental area. An independent summary of the report completed by Utopies, an independent agency set up in 1945 to further sustainable business development, concludes *'Danone do not show sufficient concern for the environmental impact of their operations i.e. integrated farming – and, to a lesser extent, the quality of their labour relations'*.

Detailed data covered in Donone's environmental CSR report includes:

- % ISO14001 certified production facilities
- % environmental audits conducted
- % change in consumption/ton output and consumption/ton in 200
- water consumption thermal
- thermal energy consumption
- total energy consumption kWhr/t
- Metered water consumption m3
- Energy - thermal & electrical
- Waste
 - generation ton
 - Recovery ton
 - Waste recovery rate %

- Water pollution – net COD ton
- Greenhouse Gas Emissions
 - Carbon Dioxide CO₂ (T)
 - Sulphur Dioxide SO_x (T)

Danone does not consider itself to be responsible for governments policy decision surrounding the use of genetically modified organisms (GMOs), though it has currently chosen not to use them in their products for consumption in Europe. Where the use of GMOs is generally accepted (such as in the US), Danone will continue to use GMOs in their products. This is a good example of the role of a company defining its policy in the light of expectations of society. With regard to their activities in China, Danone are quoted on *'not intending to change the world but take care of their employees and other direct stakeholders'*.

For Danone CSR is part of its dual commitment to business success and social responsibility. CSR is part of the corporate culture.

The 'Danone Way' is presented as Danone's tool to manage sustainable development. The tool allows each subsidiary to share the group's values and objectives. It is a stakeholder-based approach aiming at making progress with regard to all relevant issues identified for every stakeholder (employees, shareholders, local communities, environmental, suppliers and customers).

1.12.3. Case Study 3 Chiquita

Chiquita Brands was once called United Fruit Company, a name which in the mind of critical observers was synonymous with arrogance and abusive practices, the company which was so dominant in some Central American countries that it led to the term 'banana republic'. Today bananas are still Chiquita's main product but the company's reputation is

considerably removed from that of a generation ago. Chiquita implemented its corporate responsibility programme in 2002 at the same time as undergoing financial restructuring. Chiquita's CSR work commenced in 1992 with a decision to cooperate with an environmental NGO called the Rainforest Alliance whose mission is the conservation of the tropical environment. They designed social and environmental criteria for sustainable banana production and an environmental certification system. This cooperation cost Chiquita 20 million dollars, leading to certification of all owned farms after 10 years (29,000 hectares). Independent experts inspect the farms annually. After some bad press experiences CSR gained some momentum with Chiquita in 1998 with an inspired CEO who challenged his team to establish a system which could ensure high ethical and social standards throughout the company. The first actions taken were the definition of values and the publication of a code of conduct. Chiquita's definition of CSR involves:

- Managing all operations in accordance with core values and a 'Code of Conduct'.
- Achieving high environmental, social and ethical standards.
- Balancing the interest of its stakeholders i.e. consumers, customers, employees, trade unions, business partners, shareholders, governments, local communities, and environment.

The following practical steps towards CSR have been implemented:

- Appointment of a Corporate Responsibility (CR) officer.
- Appointment of CR specialists in all business units.
- Development of management systems and procedures that govern implementation.
- Integration of CSR into the company's strategy and planning.
- Definition of annual CR objectives for managers.
- Inclusion of CR performance as a factor in determining annual bonus payments.
- Requirement for all managers to sign annual code of conduct compliance statements.

Chiquita conduct internally organised social audits but invite trade unions and human rights NGO's to participate in the audits from start to finish. Results from all auditors are published. Since 2001 Chiquita have published annual corporate responsibility reports which include a chart illustrating areas of non-compliance or in partial compliance with the SA8000 standard for each banana production division. Social Accountability International (SAI) is a human rights organization founded in 1996 that seeks to improve workplaces and communities around the world by developing and implementing socially responsible standards. To fulfill its mission, SAI convenes all key sectors, including workers and trade unions, companies, government, non-governmental organizations, socially responsible investors and consumers, to operate consensus-based voluntary standards; accredits qualified organizations to verify compliance; and, promotes understanding and implementation of such standards worldwide. SAI systems feature certification of compliance (SA8000) at the facility level and support for companies seeking to implement the standard (Social Accountability International).

Public recognition of Chiquita's achievements is evident from recent headlines e.g. 'The banana giant that found its gentle side' (Financial Times, 2002).

1.12.4. CSR considerations for food companies

In the manufacture of a final consumption food product many processes take place that form a production system. These processes generate a large variety of impacts over the life cycle of the product. A technique for assessing the potential environmental impacts associated with the manufacture of a product is life cycle assessment (LCA). Food production requires the input of natural raw materials such as crops, water and milk but also of energy provided by natural resources. A doubling of global food demand is expected in the next 50 years. This

poses huge challenges for the sustainability of food production. The use of environmental indicators applicable to the food industry are presented in this study.

Environmental CSR reporting highlights not only success stories but also required disclosure of high-risk areas for the company. For the case study company this type of reporting is expected to aid in efforts to understand how well it is performing, communicates this to others and learns from those who do better. Fundamental to the company's approach is to focus on what is important for its stakeholders.

SECTION 2 Materials and Methods

2.1. Introduction

One of the biggest challenges facing CSR-minded companies is how to really integrate the CSR philosophy and objectives into the daily business. In companies where there is a lack in availability of management tools, aiming for a maximal exchange of experience and best practices is seen as a good starting point for CSR. It is also important to produce a convergence to shared principles utilising a few robust coordinates to frame the on-going development and dialogue around CSR reporting. While a one-size-fits-all is not a realistic approach for the food and drinks sector, where size, culture and where the company operations are located can vary immensely, it is still important that companies adhere to some set of common principles to produce progress towards broadly shared goals.

2.2. Case Study Company: Glanbia Ingredients Ireland

Glanbia is the largest dairy processor in the British Isles and one of the top ten in Europe. Capable of processing over 200 million gallons of milk and 175 million gallons of whey annually, since being expanded, the Ballyragget facility is Europe's largest multi-product dairy facility.

Originally opened in 1967, the Ballyragget site currently employs 300 people and incorporates eleven factories, including two butter plants, one cheese plant, two casein plants and separate units for MPC and SMP along with newly installed lactose and WPC plants.

Ballyragget is the largest processing facility of Glanbia's dairy-based food ingredients business, which also encompasses plants in Virginia, Co. Cavan, which specialises in whey cream and fat filled milk powder production and Kilmeaden, Co. Waterford, which specialises in cheese production.

Glanbia processes about 30% of Ireland's milk quota and the majority of this volume is handled by the Food Ingredients business.

Glanbia is currently progressing a corporate branding strategy around being a clean food company and with this in mind the need for a CSR plan is very relevant to the company's future. An incremental approach in adopting CSR is being pursued. This particular aspect of the approach covers only the environmental aspects of Glanbia's operations. Over time it is expected this process will result in full adoption of CSR in terms of economic, environmental and social reporting.

2.3. Drivers for Glanbia Ingredients

While there is currently no legal foothold on CSR reporting, Environmental Corporate reporting is well on its way to achieving legal status. However a number of applicable pieces of legislation were identified as driving forces towards Environmental CSR for the company. Some of these key pieces of legislation which guide and dictate the actions the company must take to minimise its impact on its surrounding environment are highlighted below:

1. IPPC Directive. All three ingredients processing sites fall within the IPPC threshold.

To date the Ballyragget and Virginia site have received IPC licences. The Kilmeaden site will be licensed under issuance of the government timeframe order for IPPC rollout expected to be published by the end of 2004. IPPC licences are to be determined having regard to the principle of Best Available Technology (BAT) which in turn is based on the BAT reference (BREF) documents being developed for each sector by the EU.

2. Climate Change. The 1997 Kyoto protocol sets legally binding targets to tackle the global environmental climate change problem. Ireland has integrated the protocol into its National Climate Change Strategy (NCCS), which agrees to limit the growth of greenhouse gas emissions by 13% above 1990 levels. Ireland presently emits 35% above 1990 level. All 3 ingredients sites of the company fall within the Emissions Trading regime and have received permit allocations limiting annual CO₂ emissions from 1st January 2005.

3. Integrated Product Policy (IPP) and Life Cycle Analysis (LCA): The IPP strategy takes the ‘cradle to grave’ view at product life cycles. For the company reducing environmental impacts from design, manufacture, distribution, sale, use and disposal will be a legal requirement once this legislation comes into force.

4. **Eco Taxes.** Following the success of the plastic bag tax (0.15c/bag) and the landfill tax (€15/tonne) the Irish government intend on extending environmental levies to other areas. Due to the inadequate infrastructure for waste in the country Glanbia's behaviour will be shaped to reduce waste production like that of the reusable plastic bag. This raises concern for the company in terms of its Tetra Pak usage, plastic liners on paper sacks and textile bulk bags.
5. **Urban Waste Water Treatment Directive:** This directive implemented by Irish local authorities sets out a water service charging structure for non-domestic users for both the supply of water and the treatment of discharged wastewater. Each local authority is free to set up its own contracts taking into account the capital costs to upgrade their facilities, operational costs and general administration costs. The charge is based of a unit charge related to volume of water used/discharges and effluent strength. For the case study company, monitoring losses and usages becomes more prevalent with these associated costs.
6. **EU Nitrate Directive.** This directive, which should already be implemented in Ireland, aims at specifying nitrate vulnerable zones. The Irish government are committed to a radical reduction in the amount and timing of both nitrate and phosphate use. They have already agreed to cut back to 1990 levels of Nitrate usage. They intend enforcing the polluter pays principle where environmental pollution can be attributed to a specific practice/incident. This will cause major restriction on the case study company's landspreading activities. Over 20,000 tonnes of sludge is currently landspread by Glanbia each year. In addition an EU working document which deals specifically with industrial sludges and their application to land is in progress. The 3rd draft of this document includes an obligation for treatment to reduce

the likelihood of spread of pathogens into the environment and required a quality assurance system for sludge spreading to build up consumer's confidence.

7. **Regional waste management plans (WMP).** These WMP's set out targets for reduction in intake of industrial wastes – some with total elimination of industrial waste from the landfill sites. For each of the three landfill sites utilised by the company all recyclable material has been banned. In addition, the revised EU Packaging Waste Directive increases current recycling and reuse targets which will in turn be passed back to the company in the shape of increased Repak membership fees.
8. **Brand Marketing Campaign.** Glanbia is currently progressing a corporate brand strategy around being a clean food company. The possibility of taking advantage of a clean green reputation site well with this campaign.
9. **Competitors.** Glanbia's main international competitors are Danone and Nestle all of whom currently produce either CSR reports or some form of environmental performance reporting on a large scale. On the Irish market Glanbia are the first Irish dairy company to pursue CSR.

2.4. Presenting the Case

In order for CSR to be successful the company must firmly believe it must embrace CSR to maintain its licence to operate. Acceptance and buy-in by senior management is required to make any environmental management system work. CSR is no different. In the first instance the company needed the following:

- Define what CSR means for the company.
- Map current CSR activity across the operations.
- Understand stakeholder expectations of the company.
- Develop a road map for CSR.

An initial introductory presentation on Environmental CSR was presented to Glanbia's Senior Management Team (SMT) to gain an understanding , buy-in and support from the senior team. A commitment to further pursue Environmental CSR was given at this stage. An incremental approach was accepted with the aim of first producing an internal edition environmental CSR report for 2004 and following a review at this stage the next public reporting step was targeted for 2006.

2.5. Approach to CSR

On deciding an approach to CSR the company were faced with 2 choices:

- wait for regulatory drivers to be put into legislation, or,
- predict new environmental challenges, define and implement innovative solutions and turn this behaviour into sustainable business success.

In order to determine a suitable approach to CSR for the company the environmental drivers needed to be identified firstly. An overall picture of the case study company's current situation in respect of these driving forces needed to be compiled. In order for CSR reporting to benefit the organisation it was essential to ensure that exposure to any environmental risks did not occur. If an environmental problem happened that CSR reporting would highlight it and place it in the public domain. A gap analysis was developed by the author to assess what the company's status was vis a vis CSR versus the ideal CSR reporting position the company needed to achieve. An outline of the gap analysis and implementation plan required to prepare for CSR implementation and reporting is presented in this methodology.

CSR Actions Undertaken

Initially management buy-in was sought and achieved. This is a crucial initial step in developing a CSR strategy. The following list of actions were then undertaken.

- Formulate a CSR Strategy for Glanbia
- Develop environmental plans and programs
- Design appropriate structures and systems
- CSR Action Measures
- CSR Performance

Each of these actions are described in the following sections.

2.5.1. Formulate a CSR strategy for Glanbia

A project definition was prepared by the author to define the projects' context, scope, assumptions, acceptance criteria, approach, interdependencies, key milestones, and costs and resources. Feedback from the SMT was integrated into this strategy. The final approach adapted to environmental CSR by Glanbia is shown in Figure 7: Summary Approach to Environmental CSR.

The approach used was to identify the drivers. The author following the completion of the literature review undertook identification of these drivers. The author developed a summary approach to environmental CSR for Glanbia at this stage (Figure 7: Summary Approach to Environmental CSR for Glanbia). When the drivers had been identified management commitment was obtained. Commitment was forthcoming on the basis of a trial internal reporting period, regular feedback to senior management on progress (every 3 months) and the development of clear, concise and pertinent environmental CSR indicators for the company. As a group CSR strategy was in place, the summary approach to environmental CSR fitted in well with the overall plan. Specific timeframes had to be agreed to synchronise the various other aspects of planned CSR reporting within the company.

Following management commitment an Environmental Forum was established. The forum consists of environmental managers from across Glanbia's business units. An external consultant was employed to guide and direct this group in its task of developing environmental CSR reporting for Glanbia.

An assessment of Glanbia's status relative to each of the drivers was prepared by the author. This process is described in Section 2.5.2.

The gap analysis conducted identified a number of actions to be completed to commence necessary CSR activities. Environmental plans and programme to implement these were then prepared as described in Section 2.5.3. Design appropriate structures and systems required to

implement the plans and programmes were prepared as described in Section 2.5.4. Other actions required are described in Section 2.5.5. including the development of Key Performance Indicators and Glanbia's Environmental Management System.

In order to produce a CSR report annual performance data is required; its development by the author is described in Section 2.5.6 and Section 2.8.

The approach involved a continual cycle of annual performance reporting, feeding back to the environmental forum who are responsible for the continuous assessment of CSR reporting and achievement of CSR action plans.

Summary Approach to Environmental CSR

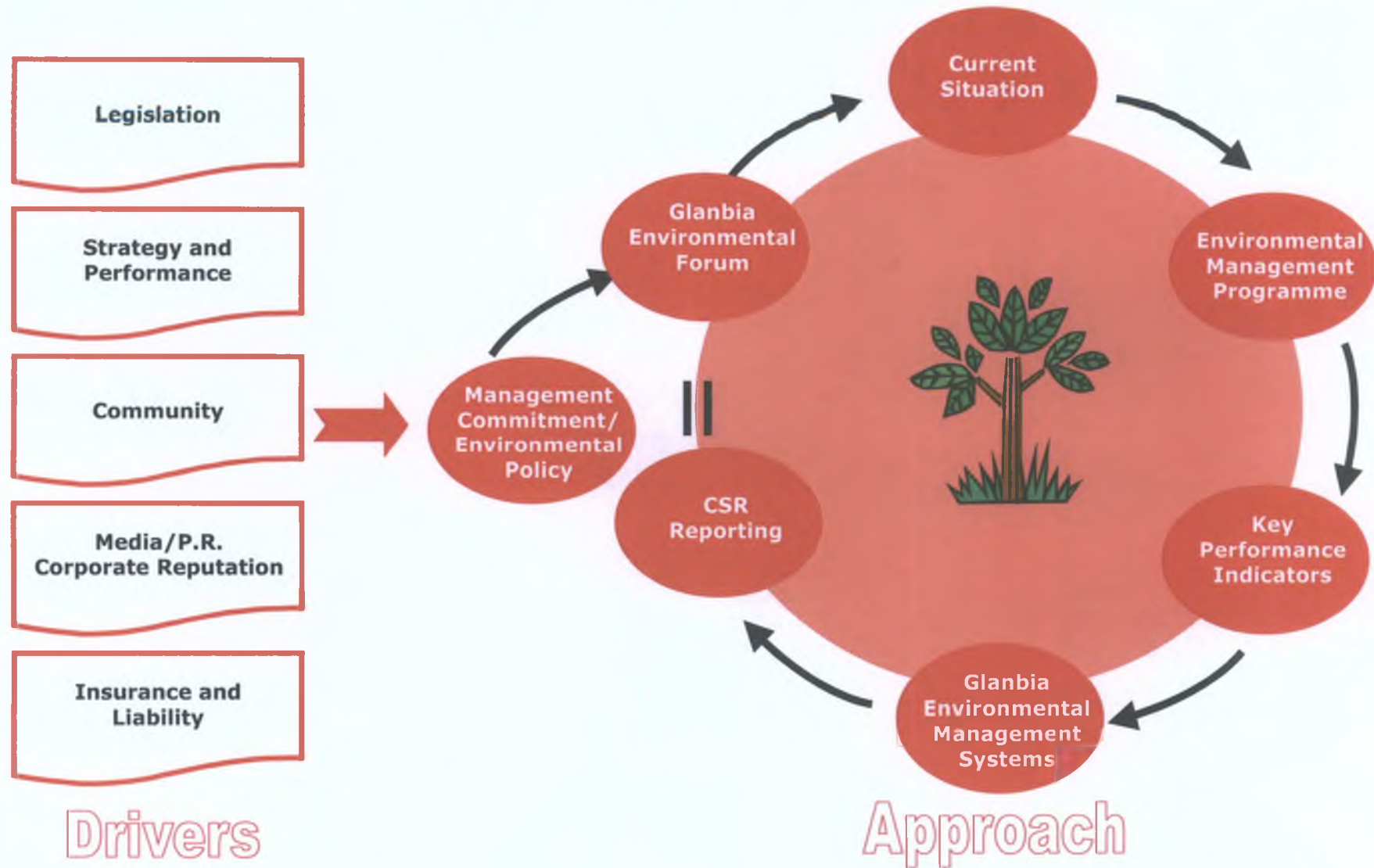


Figure 7: Summary Approach to Environmental CSR for Glanbia

2.5.2. Map existing CSR activities

On commencement of the project to implement CSR in Glanbia the status of each of the 3 facilities within Glanbia Ingredients in relation to the CSR drivers was unknown. While the individual sites understood where each stood an overall picture was not available (i.e. ‘cumulative effect’). Therefore the first step required was a site assessment for each of the three sites. Two spreadsheets assessments was designed by the Glanbia Environmental Forum to capture this information a Traffic Light Assessment as described in Section 2.8.1 and the Data Input Questionnaire as described in Section 2.8.2.

A review of the existing environmental reporting activities at Glanbia was undertaken by the author. Currently Glanbia Ingredients produce an Annual Environmental Report (AER) as part of the IPC licensing requirement. Of the 3 sites included in the CSR review 2 produce AER’s. The third site has no reporting requirement but does conduct an Annual Management Review as part of its ISO14001 which includes reporting on Key Performance Indicators (KPI). In this respect all three sites maintain KPI data and targets albeit independently.

Glanbia produced an Environmental Responsibility Program in 2001. The report includes a management statement, environmental policy and details of a significant environmental investment programme. 3 specific case studies were included in the report, namely, membrane technology for wastewater treatment, Combined Heat and Power (CHP) and nutrient management planning (NMP’s) for sludge landspreading. Publication of the report coincided with an environmental open day to officially mark the commencement of the CHP operation. The local community were circulated with copies of the report along with employees, shareholders and suppliers.

2.5.3. Develop environmental plans and programmes

The senior managers of the Glanbia Ingredients division were interviewed in order to understand their perspectives of CSR and to identify the key challenges and opportunities for the company as they saw them. Existing processes of environmental management and data collection were examined and compared to best practice as per the CSR guidelines identified in the literature review after these interviews. A recommendation and CSR road map was then presented to senior management.

The need for CSR duty of care and CSR and environmental codes of conduct was highlighted as a requirement for each of the company's 3 case study sites to ensure consistent approach towards areas of waste management, environmental monitoring and control, bunding requirements, landspreading practices and chemical control. Examples of the codes of practice developed are presented in Appendix Two.

2.5.4. Design appropriate structures and systems

Environmental Management System

Each of the 3 individual Glanbia Ingredients managed their environmental systems separately. Each EMS was independently certified to the ISO14001 standard. In order to better integrate environmental CSR into the business, the preparation of a standard Glanbia Environmental Management System (GEMS) was pursued. Having a single GEMS system would allow the company to focus on generic environmental objectives with site specific targets, a single environmental policy and practices leading to a more simplistic method of CSR reporting. This single system was developed by the author and integrated into the

management processes of each site. Accreditation of the system to ISO14001 was achieved in July 2004 under a multi-site registration scheme.

Environmental Management Programme

An EMP was developed as part of the GEMS system to ensure the requirements of the CSR drivers are met. This involved setting up projects to minimise exposure areas.

2.5.5. CSR Action Measures

Glanbia Ingredients Environmental Forum

An Environmental Forum was set up to review site assessment feedback, agree Glanbia environmental policies and codes of conduct and disseminate information on the CSR drivers throughout Glanbia (covering all Glanbia sites including the 3 ingredients case study sites). The requirement for the Forum was identified after management commitment was obtained as illustrated in Figure 7, Summary Approach to Environmental CSR for Glanbia. The Forum facilitated follow-up and implementation of environmental management programmes. Outputs from the Forum determined the key issues that Glanbia require to address at national and EU level. The Forum also aims to influence regulatory drivers through active participation and lobbying of regulatory and advisory bodies. The Forum acts as an information network for Glanbia's environmental managers to imitate good practice and learn best practice from others.

Key Performance Indicators (KPI's)

KPI's offer a logical basis for targets and milestones and for developing standards for reports and verification. By developing a standard approach Glanbia Ingredients, senior management could become familiar with the process for assessing environmental risk exposure, this in turn assists decision making on-site and organisational performance.

Environment Bulletin

An environmental bulletin was produced by the Environmental Forum to provide quarterly updates on CSR drivers, progress on EMP items at site level, and highlight risk exposure areas. The target audience for the publication were the Forum itself, all environmental managers within Glanbia and senior managers. It was integrated into the currently monthly management update bulletin which is distributed to all Glanbia management.

2.5.6. CSR Performance Data

In order to provide annual performance data a list of reporting criteria was set-up by the Environmental Forum to compare established KPI's criteria with Glanbia selected criteria and to also compare the KPI results from each site with each other. (Refer to Section 2.8 Performance Data). The overall assessment comprised of both qualitative assessments, detailing resources and management systems in place and a quantitative assessment highlighting the major risk exposure areas.

2.6. Programs and Resources

Reporting by the author on the following measures for the 3 case study sites was included in reporting of CSR progress to the SMT.

1. Progress towards zero emissions.
2. Reductions in waste.
3. Process changes adopted to reduce waste, emissions and energy consumption; and costs or savings associated with those changes.

4. Level of emissions, expenditures for pollution prevention, amounts of materials that are recycled and/or diverted from the waste stream, and amounts of energy consumed and conserved, by major type.
5. Funds committed for research and development on more effective pollution prevention and control and energy conservation.
6. Number of complaints, non-conformances and prosecutions for environmental infractions.
7. Number and percentage of facilities which are certified to ISO14001 and continuous improvement of environmental performance.
8. Degree of integration of environmental impacts into daily management decisions.

2.7. Measuring Environmental Impacts

The measurement of environmental impact was undertaken by utilising a number of spreadsheet-based tools for data analysis. The existing Glanbia Quality Risk Assessment format was used to design the environmental impact risk assessment spreadsheet. These tools were designed with this specific case study in mind by the author.

2.7.1. Product Life Cycle

An overview of the milk life cycle at Glanbia is represented below. Several business sectors interact to complete the production process. The system boundary defines all the food production operations required to complete Glanbia's milk manufacturing chain. Within this system Glanbia Ingredients only has direct responsibility and control of the milk processing step and a number of the support services (e.g. energy generation). Transportation at each stage is undertaken independently of the milk processing operations and is excluded for the purposes of this study.

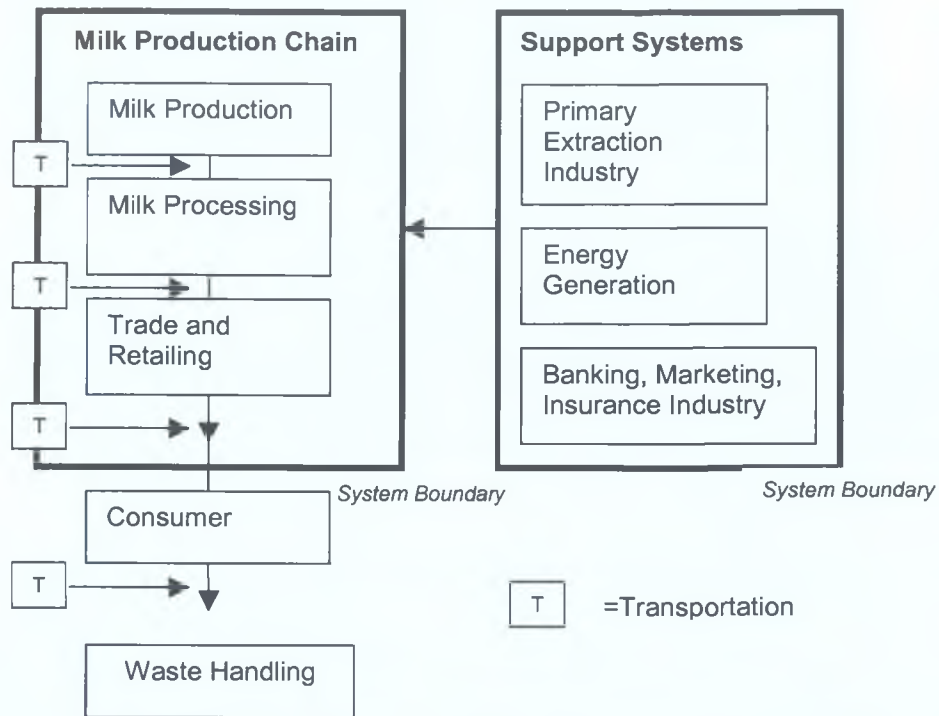


Figure 8: Milk Life Cycle at Glanbia

Within the milk processing step an assessment of all environmental impacts of the operation was undertaken. The results are shown diagrammatically in Figure 8 below. The environmental management system in place, in all 3 case study sites, currently addresses each of these impacts and the actions taken to prevent, minimise or reduce the impact is summarised on the outer ring of the impacts wheel in Figure 9.

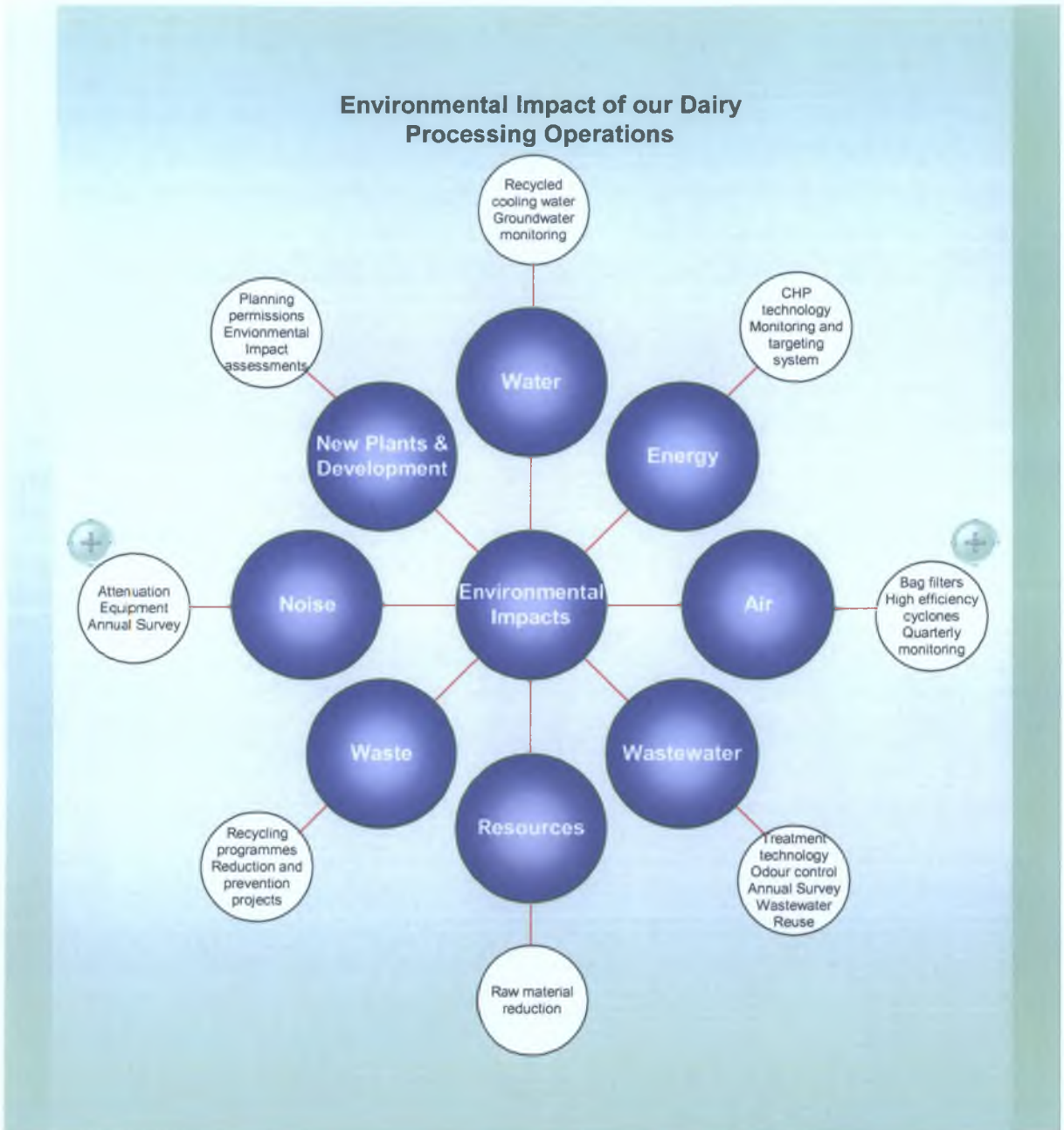


Figure 9: Environmental Impacts of Dairy Processing Activities

2.8. Performance Data

2.8.1. Traffic Light Assessment Spreadsheet

In order to determine an overall environmental CSR overview of each site a ‘traffic light assessment spreadsheet’ was developed by the Glanbia CSR Environment forum. The approach taken to its development was similar to the existing Glanbia Quality System Traffic Light assessment in order to maintain consistency within the systems.

The following codes are used:

Red: High Risk

Amber: Low Risk

Green: No Risk

The environmental traffic light assessment sheet was reformulated on a number of occasions until management were satisfied that the significant risks were highlighted clearly. In particular the division of the risks into (1) High level operational risks and (2) low level administrative risks were most useful.

The collection of traffic light assessment data takes two forms:

1. General site questionnaire: Provided the base site data to identify each site, determine its environmental management contacts, operational permissions and controls and general environmental management data.
2. Data input questionnaire : A series of Y/N questions must be answered annually on the significant environmental effects. This data is considered more qualitative than quantitative.

Inputting into the traffic light assessment was completed by the author for the 3 case study sites via the general site questionnaire and the data input questionnaire. Refer to Appendix One, Figure 21: General Site Questionnaire and Figure 22, Data Input Questionnaire.

The general site questionnaire addressed operational permissions with the following Y/N questions .

No.	Question	Rating
1	Do all operations on site have appropriate planning permissions?	No rating
2	Does the site have an IPC/IPPC licence?	Y= -1 N= 0
3	Does the site have certified ISO14001?	Y= -1 N= 0
4	Does the site have certified EMAS?	Y= -1 N= 0

Figure 10: Operational Permissions

The higher the levels on control exerted on the management of a sites environmental impacts the greater the green rating is allocated to that site. The holding of an IPC licence was given a rating of -1 as a IPC licensed site is legally bound to control of environmental impacts over all its major environmental aspects. Likewise sites which are certified to ISO14001 and/or EMAS are expected to have greater control over their environmental impacts and in addition are subject to regular external audits of their management systems.

The status of a number of specific environmental issues were then established as part of the general input questionnaire:

No.	Question	Rating
5	Does the site have a history of complaints from neighbours with regard to air emissions?	Y= +1 N= 0
6	Does the site have a history of complaints from neighbours with regard to noise/vibration?	Y= +1 N= 0
7	Does the site have a history of complaints from neighbours with	Y= +1

	regard to odour?	N= 0
8	Does the site have a history of complaints from neighbours with regard to impact on waters?	Y= +1 N= 0
9	Has there been any records of worker concerns in regard of hazardous materials, e.g. asbestos?	Y= +1 N=0
10	Has the site had any notices from regulators in regard of waste management or disposal?	Y= +1 N= 0
11	Has the site had any notices from regulators in regard of packaging waste?	Y= +1 N= 0
12	Is the site in urban/industrial (as opposed to rural) setting?	No rating
13	Are environmentally-sensitive surface-waters or bathing waters situation near the site?	Y= +1 N= 0
14	Are any environmentally-sensitive aquifers situated within 1 mile of the site?	Y= +1 N= 0
15	Has any waste, historically, been disposed of on-site?	Y= +1 N= 0

Figure 11: Specific Environmental Issues

Information on control of each of these impacts was then collected by the author for the 3 case study sites. Table 22: Data Input Questionnaire, was utilised to collect this information. Control can be exerted in a number of ways. These can be categorised as either managerial (through procedures, work instruction, training, maintenance, visual inspection, and testing program's) or physical (e.g. containment of chemical storage tanks, provision of emergency response kit, upgrade of an effluent plant).

The data input questionnaire provided a baseline assessment of all environmental issues and areas requiring attention. Key risk impacts were assessed in this way. The key impacts assessed were: air emissions, odour, greenhouse gas management, materials management, hazardous materials, wastewater emissions, groundwater and surface water, waste, energy, nuisance and complaints.

2.8.2. Data Input Questionnaire Features

Refer to Appendix One to view the total data input questionnaire. Question ratings are given a score of +5 if the initial answer to the issue is ‘Yes’ – this is an environmental impact of the site. The control measures will reduce this rating where they are in place. As an example a number of sections are described in detail here.

Air Emissions Section

No.	Question	Rating
1	Have there been regulatory non compliance notices served to the site with regard to combustion or particulate emission in the past 3 years?	Y=5 N=0
1a	If Q1 is ‘Y’, are there regulator-approved documented plans to remove, replace or upgrade non-compliant plant within 2years?	Y= -2 N= 0
1b	If Q1 is ‘Y’, are there regulator-approved documented plans to fit flue treatment technologies to non-compliant plant within 1 year?	Y= -2 N= 0

Figure 12: Air Emissions Ratings

To calculate the overall rating for this impact the negative sum of each of the above answers is summed to a number of the operational permissions section ratings. In this example Figure 11: Air Emissions Ratings and summed to Figure 10: Operational Permissions, No. 2, 3, 4 and 5.

The overall negative summed rating determines if the impact results in a red, amber or green status.

Status	Overall Rating
Red	-5
Amber	-1 to -4
Green	All positive ratings

Figure 13: Traffic Light Ratings

In this example the following details the answers supplied and the resulting ratings.

Answers provided to Figure 10: Operational Permissions and Figure 11: Specific Environmental Issues

Q2 – Answer Y	Rating -1
Q3 – Answer Y	Rating -1
Q4 – Answer N	Rating 0
Q5 – Answer N	Rating 0

Answers provided to Figure 12: Air Emissions Ratings

Q1 – Answer Y	Rating +5
Q1a – Answer Y	Rating -2
Q1b – Answer N	Rating 0

The overall rating = -sum(all above ratings) = $-(-1+-1+0+0+5+-2+0) = -1$

A result of -1 gives a traffic light rating of Amber. This highlights the need for further action on air emissions. As an action plan is in place the rating is not ranked at a severe Red light.

Wastewater Discharges Section

Wastewater is dealt with under 3 headings: discharges, BOD/COD emissions and other waste water emissions. Questions referring to the wastewater discharges section are shown in the table below.

No.	Question	Rating
6	Are any wastewater discharges from the site directly to an important surface water body ?	Y= 5 N= 0
6a	If Q6 is 'Y', has the WWTP complied with its licence limit values for 95% of test in the last 3 years ?	Y= -3 N= 0

Figure 14: Wastewater Discharge Ratings

The sum of the above ratings added to the sum of Figure 10: Operational Permissions, No. 2, 3, 4 and Figure 11. Specific Environmental Issues No. 8 and 13 give a total traffic light rating for wastewater discharges.

Answers provided to Figure 10: Operational Permissions and Figure 11: Specific Environmental Issues

Q2 –Answer Y Rating -1

Q3 –Answer Y Rating -1

Q4 –Answer N Rating 0

Q8 –Answer N Rating 0

Q13 –Answer Y Rating +1

Answers provided to Figure 14: Wastewater Discharge Ratings

Q6 – Answer Y Rating +5

Q6a – Answer Y Rating -3

The overall rating = -sum(all above ratings) = $-(-1+-1+0+0+1+5+-3) = -1$

A result of -1 gives a traffic light rating of Amber. This highlights the need for further action on water emissions due to the sensitive nature of the discharge water body.

Energy Section

No.	Question	Rating
17	Does the Environmental Manager maintain a documented energy efficiency file for the site?	Y= 5 N= 0
17a	If Q1 is 'N', are the last 3 years electricity bills and fuel purchase records available to the Environmental Manager?	Y= -1 N= 0
17b	If Q17 is 'N', does the site monitor energy usage through an IT-data management system?	Y= -1 N= 0
17c	If Q17 is 'N', does the site purchase or invest in energy from renewable sources (including CHP)?	Y= -1 N= 0
17d	If Q17 is 'N', does the site use liquid fuels for energy generation on-site (other than for back-up generators)?	Y= 2 N= 0
17e	If Q17 is 'N', does the site currently know what its carbon-tax (Kyoto protocol compliance) liability will be for the next financial year?	Y= -1 N= 0

Figure 15: Energy Ratings

The sum of the above ratings added to the sum of Figure 10: Operational Permissions, No. 2, 3, and 4 give a total traffic light rating for energy.

Answers provided to Figure 10: Operational Permissions and Figure 11: Specific Environmental Issues

Q2 –Answer Y Rating -1

Q3 –Answer Y Rating -1

Q4 –Answer N Rating 0

Answers provided to Figure 15: Energy Ratings

Q17 – Answer Y Rating +5

Q17a – Answer Y Rating -1

Q17b – Answer Y Rating -1

Q17c – Answer Y Rating -1

Q17d – Answer N Rating 0

Q17e – Answer Y Rating -1

The overall rating = -sum(all above ratings) = -(-1+-1+0+5+-1+-1+-1+0+-1) = +1

A result of +1 gives a traffic light rating of Green. Good energy management practices added to a high level of control over energy management are responsible for this result.

2.8.3. Data Collection Spreadsheet

The collection of historic data was undertaken by the author for the 3 case study sites covering the 2002 and 2003 reporting period.

A single data collection spreadsheet was utilised. A range of environmental monitoring and performance results are inputted on an annual basis. All of this data is quantitative.

2.8.4. Data Collection Spreadsheet Features

The following table details the total list of annualised data, which was collected for 2002 and 2003, for each of the 3 case study sites.

Measurement Description

1.1 Total Raw Materials Received (tonnes)

1.2 Total Production Output (tonnes)

2.1 Direct Combustion Emissions

Kerosene/Diesel used (Litres)

Heavy Fuel Oil used (Litres)

Natural Gas used (therm)

Coal used (tonnes)

2.2 Particulate Emissions

Total Particulate Emissions (tonnes)

2.3 Noise Emissions

Average daytime boundary noise-level (dBA)

Average nighttime boundary noise-level (dBA)

Maximum daytime boundary noise-level (dBA)

Maximum nighttime boundary noise-level (dBA)

2.4 Odour Emissions

Average odour level at nearest receptor (OU)

Maximum odour level at nearest receptor (OU)

3.1 Water use

Mains water used (m³)

Groundwater/Well water used (m³)

Other water used (m³)

3.2 Wastewater emissions

Wastewater volume discharged direct to public sewer (m³)

Wastewater volume discharged direct to watercourse (m³)

Wastewater volume received at on-site WWTP (m³)

Wastewater volume discharged following treatment from on-site WWTP (m³)

3.3 Specific Wastewater Emissions

COD received at WWTP (tonnes)

COD discharged from WWTP (tonnes)

COD discharged untreated to sewer (tonnes)

COD discharged to land (tonnes)

Phosphate Emissions from facility (tonnes)

Nitrate Emissions from facility (tonnes)

Chloride Emissions from facility (tonnes)

4.1 Biowaste generation

WWTP sludge waste (tonnes)

Animal slurry waste (tonnes)

Whey waste (tonnes)

Offal and Specific Risk Material waste (tonnes)

Blood waste (tonnes)

Other biowastes (tonnes)

4.2	By-Products generation (include materials that may sometimes be sold as commercial by-products of manufacturing)
	By-Products (tonnes)
4.3	Production waste generation
	Total non-hazardous waste [including recyclables] (tonnes)
	Total hazardous waste [including recyclables] (tonnes)
	Total non-hazardous waste recycled (tonnes)
	Total hazardous waste recycled (tonnes)
	Scrapped or redundant plant (tonnes)
	C&D waste generated (tonnes)
5.1	Energy Use
	Total electricity used on-site (kWh)
6.1	Packaging
	Packaging materials used for products manufactured on-site (tonnes)
	Packaging regulation compliance costs for site (€)
	Packaging purchase costs for site (€)
7.1	Complaints and Compliance
	Number of written complaints received re. environment by the site
	Number of verbal complaints received re. environment by the site
	Number of regulatory non-compliance notices received by site re. environment
	Number of environmental incident/accidents at the site
	Number of regulatory environmental audits at site
	Number of ISO14000/EMAS certification audits
	Number of environmental self-audits
	Successful ISO14001/EMAS certification (YES/NO)?

Figure 16: Data Collection Table

Solid Waste is subdivided to identify (a) Biowastes (b) by-products and (c) other production wastes. The current EU food and drinks industry's definition of wastes is used as the means to sub divide this section due to its applicability to the case study firm. These waste types are defined as:

- Biowastes
- By Products
- Other Production Wastes

Refer to Appendix Two :Code of practice for the waste definitions utilised.

COD emissions are sub-divided to identify: COD generated from production emitted to the WWTP, COD emission from on-site WWTP, COD emissions to sewer and COD emissions to land (not including WWTP sludge, which is included in Biowaste).

In the complaints section a distinction is made between verbal complaints and written complaints. The second part contains non-compliance notices from authorities and environmental incident/accidents.

Data Collection Summary

Following completion of the data input questionnaire and the data collection spreadsheet a data collection summary was generated by the author. Refer to Appendix one. Figure 23: Data collection summary, for an example for the Glanbia Ballyragget site. The summary presents the key environmental indicators for the site in terms of inputs, outputs and systems. This provides a useful summary for senior management to determine annual trends in material usage, waste production and systems compliance. This spreadsheet was integrated into Glanbia's 2004 environmental management review (part of the existing ISO14001 system requirements).

2.8.5. Spreadsheet Sensitivity Analysis

The traffic light assessment spreadsheet highlighted the key environmental issues for the company. Validating this data by establishing if the spreadsheet assessment models the behaviour of the real-world system being represented in the data analysis was undertaken by the author. The current Environmental Management System at Glanbia Ingredients requires annual objectives and target setting by reviewing the previous years performance, reviewing legislation requirements and looking ahead to any changes/alterations affecting the performance area in the following year. Following a number of adaptations the final traffic

light assessment spreadsheet was approved by environmental management as adequately addressing the impact areas as defined under the current Environmental Management System. For this reason the results of the finalised traffic light assessment spreadsheet and system of achieving it was accepted as having meet a number of criteria. These were:

- the spreadsheet generated behavioural data was characteristic of the real system's behavioural data and
- the spreadsheet user had confidence in the spreadsheets results.

It is envisaged that the traffic light assessment spreadsheets will need to be adapted in future years as additional environmental management programmes are undertaken.

2.8.6. Data collection input data

The data collection process utilising the data collection spreadsheet involved the input of raw data by the user.

Firstly, using raw input data simulates past behaviour only, by using data from one year a replication of the performance of that year is accomplished but not necessarily of future years. For this assessment 2 historic base years are used as input data – 2002 and 2003. The information was gathered from a variety of sources, primarily from the existing Environmental Management System sources, but also required the compilation of raw data for certain parameters.

Secondly the reliance of interpretation by the user is required to generate useful results. For the purposes of this exercise the author was responsible for input of data for all 3 case study sites and therefore interpretation was not an issue.

In dealing with data collection the input process needs to ensure the final user can easily and generically interpret the questions asked to avoid variance in results and ensure quality output.

2.9. Report Features

The CSR report methodology undertaken for the case study company (encompassing the 3 separate sites) was compliance and performance based reporting mainly because the company's dependence on external regulatory agents and consent limits are core features of the company's environmental management system. Performance based reporting is structured around the companies most significant areas of environmental impact. The inclusion of a number of key sections within the report are described in detail below.

2.9.1. Management Statement

The division's CEO prepared a management statement to introduce the report. This introduced the concept of CSR and explained how it was intended that Glanbia would adapt this tool in its environmental management.

2.9.2. Environmental Policy

A divisional environmental policy was agreed as part of the new GEMS system and was included in the CSR report.

2.9.3. EMS

This section of the report describes the EMS in place, acknowledges the external accreditation achieved (e.g. ISO14001) and identifies key managerial responsibility for the various aspects of the system.

2.9.4. Environmental Performance Data

G.R.I. Indicators are virtually impossible to define for a global company manufacturing a wide range of products in many different sites and sourcing millions of different materials and components globally and locally. In this scenario a baseline of applicable environmental indicators was produced by Glanbia. The indicators selected are listed in the table below. In addition to the key environmental indicators detailed performance data was included.

Key Environmental Indicators	
INPUTS	
Raw Materials Received (kilotonnes)	
Water Used (1000 m ³)	
Electrical Energy Used (TJ)	
Thermal Energy Used (TJ)	
OUTPUTS	
Commercial Production (kilotonnes)	
Solid Waste (kilotonnes)	<i>Biowastes (kilotonnes)</i> <i>By-Products (kilotonnes)</i> <i>Production Wastes (kilotonnes)</i>
Greenhouse Gas Emissions	<i>CO₂ Emissions (kilotonnes)</i> <i>SO_x Emissions (tonnes)</i>
Wastewater Emissions	<i>Wastewater Volume (1000 m³)</i> <i>Production COD (tonnes)</i> <i>Emitted COD (tonnes)</i>
SYSTEMS	
ISO 14001 Certification	
Number of Environmental Audits per time period	
Number of Complaints / Notices per time period	<i>Written</i> <i>Verbal</i>

Figure 17: Key Performance Indicators

Detailed annual performance data forms the central feature of the report. This section includes regulatory notices and complaints along with physical data.

2.9.5. Objectives and Targets

A comprehensive set of targets that cover all key environmental issues faced, ranging from the establishment of effective management system to the responsible use of natural resources and control of waste generated and emissions are required in an environmental CSR report. The setting of objectives was undertaken at divisional level within the organisation leaving the responsibility of implementing targets to meet these objectives at site level. The objectives set were based on the results of the traffic light assessment to result in minimisation of environmental impact.

2.9.6. Outlook 2004 and 2005

A summary of future plans for environmental issues was included in the report. Future CSR reporting plans were detailed along with planned ISO14001 certification for the newly developed GEMS system and a selected number of specific environmental projects. Environment issues are to be integrated into the company's future business plan.

2.9.7. Principal Memberships

A list of environmental forums/committees to which Glanbia is affiliated is provided in the CSR report. This includes industry action groups, research study groups, and policy working groups. Reporting on any environmental awards received was also included.

2.9.8. Position Statements/ Case Studies

Where the need was identified, a number of corporate position papers were included into the CSR report e.g. position paper on emissions trading, IPPC position paper. These were

identified by the author as significant impact areas for which Glanbia needed to define their responsibilities and decide what position was most appropriate for the company.

A number of internal case studies were presented as examples of projects undertaken to minimise each risk area e.g. wastewater treatment technology.

2.9.9. Sustainability on the web

Glanbia maintain an environmental website featuring its environmental policy, activities, news and achievements. Website address: www.glanbia.ie/environment.

For this internal phase of CSR reporting the CSR Environment report produced was not made available on the website. It is intended for future years reports to be made available here.

2.10. Documentation and Implementation

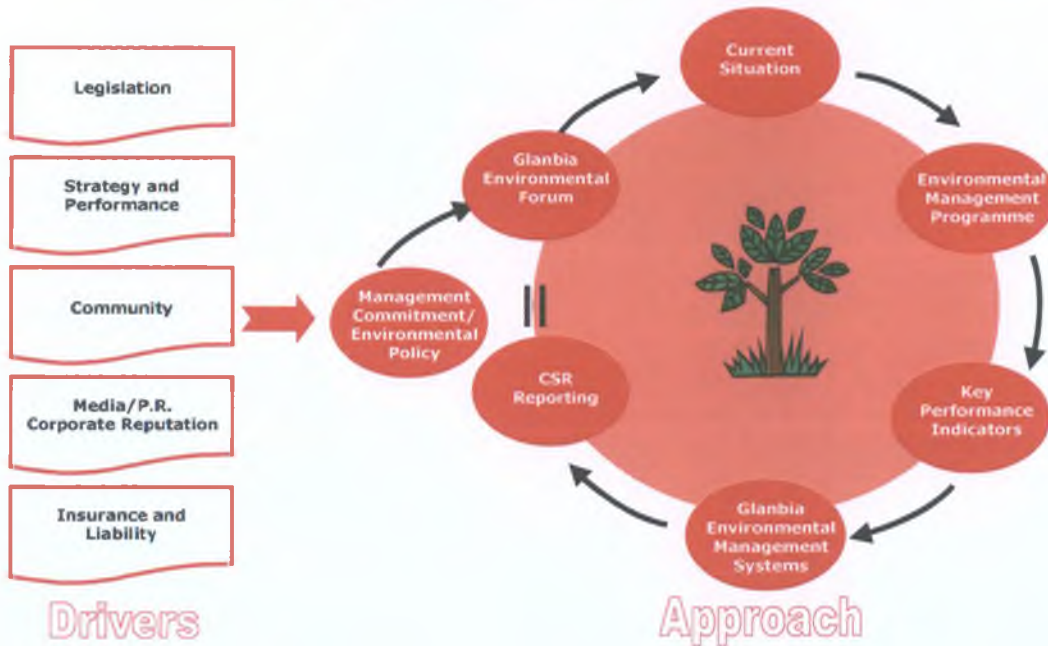
The Environmental CSR approach was adapted into the GEMS system as follows:

- The traffic light assessment and data input questionnaires were adapted as the company's environmental impacts assessment and register.
- The data collection summary was included in the company's annual environmental report to the regulatory agency.
- The recording and reporting of CSR environmental data was integrated into the environmental communications procedure of the GEMS system.

SECTION 3 Results

An approach to environmental CSR was developed for the case study company and implemented at the 3 case study sites by the author.

Summary Approach to Environmental CSR



The traffic light assessment was completed for all 3 Glanbia Ingredients sites namely, Ballyragget, Virginia and Kilmeaden. An example of the summary traffic light assessment completed for the Glanbia Ballyragget site is included in Appendix One, Figure 23: Traffic Light Assessment Ballyragget site. From these results the Ballyragget site received:

- High Level (operational) Risks: 0 Red lights, 5 Amber and 6 Green Lights
- Low Level (Administrative) Risks: 0 Red lights, 2 Amber and 7 Green Lights

The data collection questionnaire and spreadsheet was completed for all 3 Glanbia Ingredients sites, Ballyragget, Virginia and Kilmeaden. An example of the data collection summary for the Glanbia Ballyragget site is included in Appendix One, Figure 23: Data

Collection Summary. From these results baseline key performance indicators have been produced. The indicators reported are divided into inputs, outputs and systems.



An internal first edition Corporate Environment Responsibility Report 2004 (CERR) was produced for Glanbia Ingredients. The approach undertaken to CSR resulted in a first year internal CSR report which provides the basis for subsequent reporting, informs management as to the type of issues to be reported in a public CSR report and commences the CSR reporting process for a company new to the scheme. For the purposes of this thesis the

report cannot be produced in its entirety due to confidentiality reasons. The Glanbia CERR included the results from the traffic light assessments, data collection summary, etc. Refer to Figure 18: Impacts of milk processing operation. An example section is presented for the Wastewater Emissions section. Refer to Figure 18: Wastewater emissions Preview.

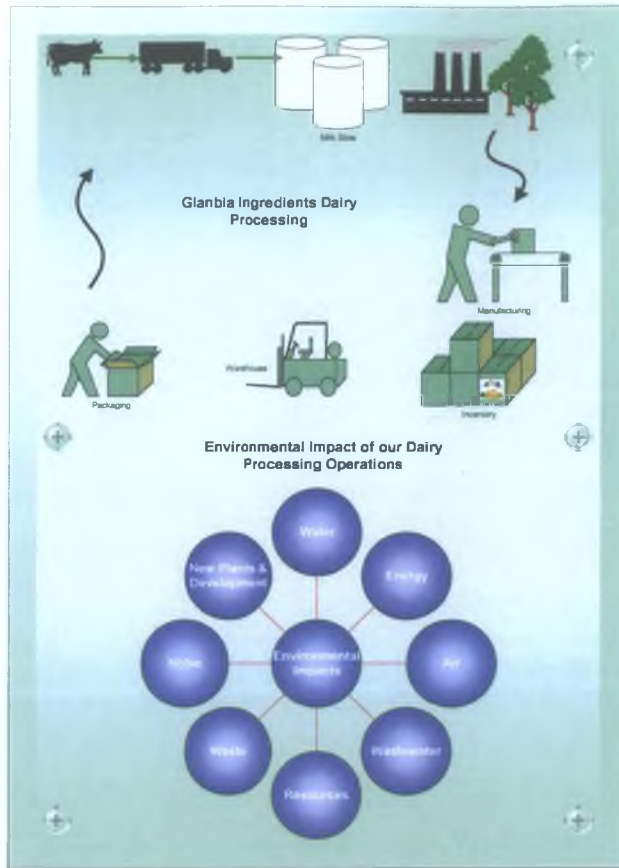


Figure 18: Impacts of milk processing operation (from CEER report)

A simple diagrammatic approach to describing the company’s operations and environmental impacts areas was included as shown in Figure 18. The idea was to make it simple for any member of the public to see how a large dairy processing site impacts its surrounding environment.

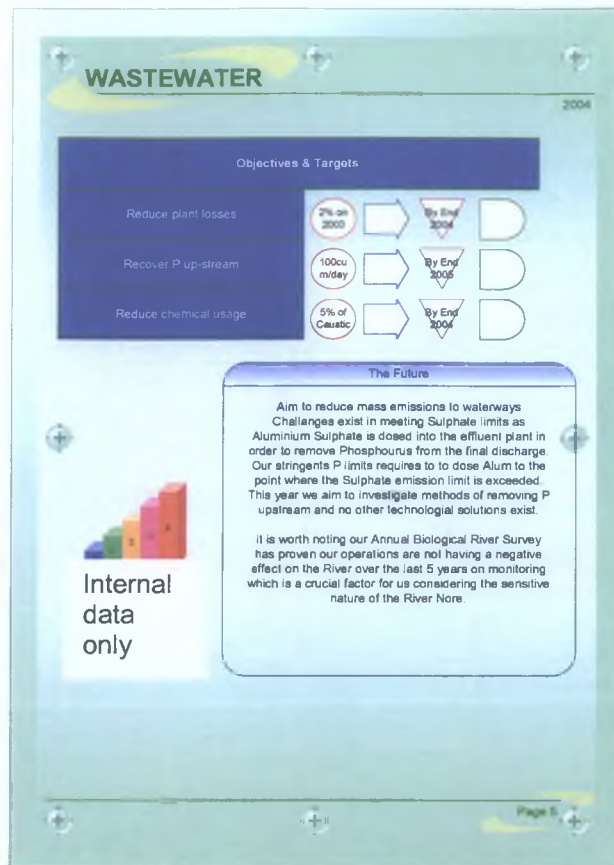


Figure 19: Waste water emissions preview (from CEER report)

The purpose of the objectives and target section in the report is to identify the actions undertaken and planned to be undertaken for any member of the public. Thus highlighting improvement areas and issues which have not been addressed. For the purposes of this thesis internal data has not been presented here.

Good progress has been made in implementing the CSR action plan in the case study firm. It has established a Environmental CSR Forum, conducted environmental data collection and traffic light assessments for 2002 and 2003, and it is actively seeking to incorporate principles of CSR into its environmental processes. An internal Glanbia CSR-Environment report was produced as a result of this study and Glanbia intend to produce its first public report in 2006. Glanbia continues to raise internal awareness on CSR and senior management support the integration of CSR into the environmental management system.

In summary from the approach developed the following action points were completed:

- Management commitment was received.
- The company's current situation in relation to the environmental CSR drivers was determined utilising the spreadsheet assessments.
- An environmental forum was set-up internally and meet quarterly.
- An environmental bulletin was produced.
- An EMP was put in place to address the gap in the current situation and lead to ultimate CSR reporting.
- KPI's were developed and reported internally.
- A divisional EMS was developed and integrated CSR policies –GEMS.
- An internal environmental CSR report was produced.
- An action plan was agreed with the firm to move from this internal environmental CSR report to a publicly available CSR reporting in 2005.
- The benefit of the reporting to the public is yet to be determined.
- Identification of level of expertise required within the company to roll out the CSR reporting to all division was highlighted as a crucial resource factor to be considered.

SECTION 4 Discussion

The way in which enterprises manage their operation can have benefits at economic, environmental and social levels, from improved productivity and competitiveness to reduced pollution and better environmental protection. While a certain number of organisations have become aware of the benefits to be gained from implementing more responsible and sustainable business practices, work remains to be done in this regard. Factors influencing the degree to which enterprise move towards more sustainable development include the size of the firm, its industrial sector, the existing body of environmental legislation etc. Small and medium-sized enterprises in particular can be further constrained by a lack of time, capital and information for implementing resource productivity and environmental management programmes, as well as being more difficult to reach and engage in such activities. Corporate culture can also be an important fact in determining whether sustainability, as a core principle, permeates a whole enterprise, or only remains limited to practical environmental issues such as complying with legislation.

SME's are already part of the community and believe there is a moral responsibility on industry to put something back into their community. Ireland's unique selling point could be its corporate responsibility, but it needs to capitalise on it and make it known. Business and society are interdependent and we must ensure through mutual understanding and responsible behaviour, that the role of business in building a better future is recognised and encouraged.

The purpose of corporate social responsibility is to avoid regulation. It permits governments and the public to believe that compulsory rules are unnecessary, as the same objectives are being met by other means. However it could be said that the advantage of voluntary rules to companies is that they can be broken whenever they turn out to be inconvenient. The

argument as to whether self-regulation is sufficient is at the fore of the European CSR Reference Standard Framework Proposal and will greatly influence the future direction of CSR.

If CSR is conceived as a means of self-regulation by business, it can also pre-empt the need for new legislation and thus help minimise regulatory burdens for business. Voluntary agreements and codes of conducts (e.g. GRI) are instruments that can be used in this context. These instrument, especially if they are seen to be credible and effective, can provide a viable alternative to legislation.

CSR provides a framework for turning theory into practice. With CSR

1. compliance is a given,
2. the benefits lie in embracing the opportunity, and
3. what gets measured gets managed.

In order for CSR to become a credible management practice it must demonstrate a commitment beyond any legislated requirements. In order to achieve this a company needs to find innovative solutions to ensure sustainable management. New tools and techniques are required to reach this level of commitment to CSR. A role for government organisations, CSR networks and working groups therefore exists in aiding this learning process.

Companies cannot be held responsible for solving all the problems of the world, but they can contribute to it by providing more information, fighting corruption and bribery etc. Here, other members of society are called upon for action as well e.g. government.

Full disclosure of the company's processes, procedures and assumption are an essential for the credibility of a CSR report.

CSR reports require third party verification to build a greater trust amongst users of reports.

In order to achieve the real potential of this independent assurance a number of action areas are identified:

- There are as yet no generally accepted rules for providing independent assurance of non-financial reports, so the more ideas and practical experiences which are shared in these reports the more robust assurance will become.
- There is a need for a single set of guidelines for reporting and assurance that ensure some consistency in format and content while encouraging diversity. The GRI are moving towards these aims.
- There is a need to develop a reliable and systematic method for involving stakeholders in the assurance process.

SECTION 5 Conclusions & Future Recommendations

There is nothing novel about the idea of CSR. The novelty is not the idea; it is in the execution of the idea, in the disciplined and sustained integration of socially responsible standards into the daily operation of companies.

While CSR is much discussed both in terms of academic research and industry working groups getting there is far from easy. Much legislation in the past has required firms to recognise an obligation to the environment, to their employees and to their customers. While CSR may diminish profit and/or raise prices, ‘competitiveness’ cannot be only about price. The number of companies adopting CSR into their mainstream business is on the increase. Some companies are leading the way, via trial and error. The appeals of CSR make others pretend they are also doing it. Much of the present CSR and social reporting activities are only ‘window dressing’. With more and more companies using the internet as the platform for CSR reporting it is likely good CSR practice utilising available guidelines will become an indispensable communications tool for the future of CSR reporting. Achievement of further steps towards CSR will involve further legislation and specific regulation to make people adopt CSR and force company’s toward compliance– however unpopular that idea might be with business and with politicians. The greatest motivator will probably come about by increasing awareness among consumers and users of business services.

Gaining trust from stakeholders is crucial and will only be achieved through open dialogue. Trust is earned, not through glossy spin and bland seals of approval, but through transparency, accountability, and openness to independent checking and critique.

A true CSR policy is challenging, mainly because one has to manage a number of dilemmas and conflicting priorities, instead of ignoring them. As the management of contradictions and the decision-making trade-offs is such a complex duty, it is of utmost importance that senior management support the CSR strategy and policy.

In meeting the objectives of this study the following were achieved:

- A framework for the development of an environmental CSR action plan for a large multi-site dairy processing industry focusing on the environmental aspects of CSR was developed.
- The approach to development of the framework identified the environmental drivers of CSR, developed an approach to taking these drivers into consideration and produced an adaptable CSR implementation framework applicable to the food and drinks sector.
- The systems, structures and measures necessary to implement an environmental CSR strategy and produce an environmental CSR report were detailed.

Glanbia's experience recognises notable benefits from CSR environmental reporting. In particular as a management tool to keep track of environmental performance, a vehicle for continuous improvement and as a means of recognition of performance.

Future Recommendations

- In order to ensure a smooth implementation of CSR into existing environmental management systems, reporting requirements need to be integrated into the existing systems and form an integral tool for that system. Having a dedicated environmental performance tracking software system would greatly aid in the transition towards CSR and ensure its successful integration to into the business.
- Data analysis tools need further refining and development as the systems impacts change, new processes are introduced or environmental legislation is updated.
- The next step beyond environmental CSR is integrated environmental, social and financial reporting or sustainability reporting. In order to fully implement a CSR initiative all core CSR elements must be addressed.

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SECTION 7 Appendices

Appendix One: Spreadsheets

Data Analysis

Significant Environmental Effect	Question Response	Supp Info 1	Supp Info 2	Supp Info 3	Supp Info 4	Supp Info 5	Supp Info 6	Supp Info 7	Supp Info 8	Algorithm
A. Emissions to Air										
1 Combustion/Particulate Emissions	5	-2	0	-1	-1	0				1
2 Noise/Vibration/Odour Emissions	0	0	0	-1	-1	1				-1
3 Greenhouse Gas Management	0	0	0	0	0	-1	-1			-2
B. Materials Management										
5 Hazardous Liquids management	5	2	-3	-1	1	-1				3
C. Wastewater/Effluent										
6 Wastewater Discharges	5	-3	-1	-1	0	1				1
7 BOD/COD Emissions	0	0	0	-1	-1	1				-1
8 Other Wastewater Emissions	5	0	-2	-1	-1	1				2
D. Water Use										
9 Surface Water Discharges	5	-1	-2	-1	-1	1	0			1
10 Groundwater Monitoring	0	0	-1	-1	1	0				-1
11 Groundwater Quality Issues	0	0	0	0	-1	0	1			0
12 Landspreading and Groundwater	0	0	0	0	0					0
E. Waste Management & Packaging										
13 Waste Management Records	0	0	0	0	0	0	-1			-1
14 Hazardous Waste Records	0	0	0	0	-1	-1				-2
15 Waste Contractor Records	0	0	0	-1	-1					-2

16 Waste Management System	0	0	0	0	0	0	-1	1	0
F. Energy									
17 Energy Efficiency Management	0	0	0	0	0	0	-1		-1
G. Nuisance and Complaints									
18 Regulatory Non-compliance notices	0	0	0	-1					-1
19 Legal Court Cases	0	0	0	-1					-1
20 Neighbour Complaints	5	-2	-1	0	-1				1

Figure 20: Data Analysis Table

General Site Questionnaire	
Site name	Ballyragget
Business Unit	Food Ingredients
Address	Ballyragget, Co.Kilkenny
Environmental Manager	Paula Neilan
Size of Site (Ha)	100
Year Existing Operation Commenced	1968
Has the site been built on a greenfield (G) or brownfield (B) site?	G
Do all operations on site have appropriate planning permission? (Y/N)	Y
Does the site have an IPC/IPPC Licence? (Y/N)	Y
Does the site have certified ISO14001? (Y/N)	Y
Does the site have certified EMAS? (Y/N)	N
Does the site have a history of complaints from neighbours re. air emissions? (Y/N)	N
Does the site have a history of complaints from neighbours re. noise/vibration? (Y/N)	Y
Does the site have a history of complaints from neighbours re. odour? (Y/N)	N
Does the site have a history of complaints from neighbours re. impact on waters? (Y/N)	N
Has there been any records of worker concerns in regard of haz. materials, e.g. asbestos? (Y/N)	N
Has the site had any notices from regulators in regard of waste management or disposal? (Y/N)	Y
Has the site had any notices from regulators in regard of packaging waste? (Y/N)	N
Is the site in urban/industrial (as opposed to rural) setting? (Y/N)	N
Are environmentally-sensitive surface-waters or bathing waters situated near the site? (Y/N)	Y
Are any environmentally-sensitive aquifers situated within 1 mile of the site? (Y/N)	N
Has any waste, historically, been disposed of on-site? (Y/N)	Y

Figure 21: General Site Questionnaire

Data Input Questionnaire		Yes or No
1. Emissions		Y/N
Q1	Have there been regulatory non compliance notices served to the site with regard to combustion or particulate emissions in the past three years?	Y
Q1a	If Q1 is "Y", are there regulator-approved documented plans to remove, replace or upgrade non-compliant plant within 2 years?	Y
Q1b	If Q1 is "Y", are there regulator-approved documented plans to fit flue treatment technologies to non-compliant plant within 1 year?	N
Q2	Have there been regulatory notices served to the site with regard to noise, vibration or odour emissions in the past three years?	N
Q2a	If Q2 is "Y", are there regulator-approved documented plans to remove, replace or upgrade non-compliant plant or services within 2 years?	
Q2b	If Q2 is "Y", are there regulator-approved documented plans to fit noise or odour abatement technologies to non-compliant plant or services within 1 year?	
Q3	Has the site prepared a Greenhouse Gas (GHG) Reduction programme, containing (a) quantification of recent past emissions data from fuel and electricity use, and (b) a programme of projects and targets for reduction of GHG emissions on-site? [Answer 'Y' ONLY IF BOTH answers are 'YES'.]	Y
Q3a	If Q3 is "N", has the site quantified [for the past calendar year], its GHG emissions (from use of fuels and electricity)?	
Q3b	If Q3 is "N", has the site set targets to reduce [for the existing calendar year], its GHG emissions (from use of fuels and electricity)?	
Q3c	If Q3 is "N", has the site got capital expenditure clearance to put in place more energy-efficient production plant in the next calendar year?	
Q3d	If Q3 is "N", is the site participating in a National or Regional Government 'Emissions Trading Scheme'?	
2. Materials Management Section		
Q4	Is there any Asbestos present on the site?	Y
Q4a	If Q4 is "Y", is a register of the Asbestos materials maintained on-site in accordance with National Legislation?	Y
Q4b	If Q4 is "Y", is there a periodic labelling/maintenance/checking programme in regard to these materials ?	Y
Q4c	If Q4 is "Y", are there regulator-approved & documented plans to remove these materials from the site within 2 years?	N
Q5	Are any of the following hazardous materials used and/or stored on the site: (i) refrigerants, (ii) PCBs, (iii) detergents, (iv) herbicides, (v) pesticides, (vi) fuel or maintenance oils or (vii) laboratory chemicals?	Y
Q5a	If Q5 is "Y", have there been any spills of these materials on the site in the past three years?	Y

Q5b If Q5 is "Y", are all storage areas for these materials secondarily-contained?	Y
Q5c If Q5 is "Y", are there documented spill-response procedures and records maintained on-site?	Y

3. Wastewater Section

Q6 Are any wastewater discharges from the site directly to an important surface water body?	Y
Q6a If Q6 is "Y", has the WWTP complied with its licence limit values for 95% of tests in last three years?	Y

Q7 Have there been any regulatory non-compliance trends in regard of BOD/COD emissions in the past three years?	N
Q7a If Q7 is "Y", are there regulator-approved documented plans to replace or upgrade the WWTP within 2 years?	
Q7b If Q7 is "Y", are there regulator-approved documented plans to specifically address BOD/COD non-compliances through engineering initiatives within 1 year?	

Q8 Have there been any regulatory non-compliance trends in regard of other permit/licence parameters in the past three years?	Y
Q8a If Q8 is "Y", are there regulator-approved documented plans to replace or upgrade the WWTP within 2 years?	N
Q8b If Q8 is "Y", are there regulator-approved documented plans to specifically address such non-compliances through engineering initiatives within 1 year?	Y

4. Groundwater and Surface Water Section

Q9 Have all discharges of surface water collected on the site been in compliance with licence conditions (or local regulations) for the past three years?	N
Q9a If Q9 is "N", is the site surface water infrastructure adequately contained to deal with a spillage of liquid raw materials/products on-site?	Y
Q9b If Q9 is "N", are there regulator-approved documented plans to appropriately replace or upgrade the surface water infrastructure within 2 years?	Y

Q10 Is there a groundwater-monitoring regimen at the site?	Y
Q10a If Q10 is "N", are there regulator-approved documented plans to install appropriate groundwater-monitoring infrastructure at the site within 1 year?	

Q11 Is the site groundwater-monitoring indicating a sustained deterioration of groundwater quality over the past three years?	N
Q11a If Q11 is "Y", is the site groundwater quality in compliance with licence limit values or legislative regulations?	

Q11b If Q11 is "Y", has the source of the deterioration been definitively identified on the site?

Q11c If Q11 is "Y", are there regulator-approved documented plans to specifically address deteriorating groundwater quality through engineering initiatives within 1 year?

Q12 Has landspreading of slurry, sludge, effluent or by-products generated at your site led to deteriorating groundwater quality anywhere? [If you are unsure, then answer "Y"]

N

Q12a If Q12 is "Y", is the groundwater quality at the site(s) in question complying with regulatory or legislative limit values?

Q12b If Q12 is "Y", is there a standard nutrient management plan in place at the site(s) in question?

Q12c If Q12 is "Y", is there an regulator-approved decision to cease landspreading at the site(s) in question?

Q12d If Q12 is "Y", is there an regulator-approved decision to undertake or fund remedial measures for the groundwater at the site(s) in question?

5. Waste Section

Q13 Has the site maintained tonnage records on management of all non-hazardous and biological wastes generated at the site for the past three years?

Y

Q13a If Q13 is "N", has the site maintained official dockets for all wastes disposed to landfill for the past three years?

Q13b If Q13 is "N", has the site maintained tonnage records of all wastes recycled for the past three years?

Q13c If Q13 is "N", has the site maintained tonnage records of all landspread wastes for the past three years?

Q13d If Q13 is "N", has the site maintained tonnage records of all rendered wastes for the past three years?

Q13e, If Q13 is "N", has the site illegally disposed of any wastes generated in the past three years?

Q14 Has the site maintained tonnage records on management of all hazardous wastes generated at the site for the past three years?

Y

Q14a If Q14 is "N", has the site maintained records for all hazardous wastes disposed of from the site for the past three years?

Q14b If Q14 is "N", has the site maintained destination dockets for all hazardous wastes from the site for the past three years?

Q14c, If Q14 is "N", has the site illegally disposed of any hazardous wastes generated in the past three years?

Q15 Does the site maintain a file containing permit and licence details on all waste contractors and subcontractors servicing waste (including landspreading) from the site?

Y

Q15a If Q15 is "N", has the environmental manager checked that all contractors are appropriately permitted?

Q15b If Q15 is "N", has the environmental manager checked that all destination facilities for site waste are appropriately permitted, licensed or approved?

Q16 Does the site have a documented waste management system (including measures and procedures relating to collection, handling, segregation of recyclables, hazardous wastes and handling of by-products) for all wastes and materials likely to be disposed arising on-site? Y

Q16a If Q16 is "N", is there a central collection or handling point for wastes generated on-site?

Q16b If Q16 is "N", is there a procedure for tracking as wastes, those by-products that: (a) do not have a positive commercial value, or (b) present a management cost to the company?

Q16c If Q16 is "N", are packaging wastes segregated at source for recycling purposes?

Q16d If Q16 is "N", are Office/Canteen wastes segregated at source for recycling purposes?

Q16e If Q16 is "N", are all hazardous wastes segregated at source for appropriate treatment/disposal?

6. Energy Section

Q17 Does the Environmental Manager maintain a documented energy efficiency file for the site? Y

Q17a If Q17 is "N", are the last three years electricity bills & fuel purchase records available to the Environmental Manager?

Q17b If Q17 is "N", does the site monitor energy use through an IT-data management system?

Q17c If Q17 is "N", does the site purchase or invest in energy from renewable sources (including CHP)?

Q17d If Q17 is "N", does the site use liquid fuels for energy generation on-site (other than for back-up generators)?

Q17e If Q17 is "N", does the site currently know what its carbon-tax (Kyoto protocol compliance) liability will be for the next financial year?

7. Nuisance and Complaints Section

Q18 Has the site received any regulatory non-compliance notices in the past five years? N

Q18a If Q18 is "Y", have the non-compliance(s) in question been adequately addressed to the satisfaction of the regulatory agency?

Q18b If Q18 is "Y", is it likely that the non-compliances could recur in current circumstances?

Q19 Has the site had any court cases in regard of an environmental incident in the past five years? N

Q19a If Q19 is "Y", have the environmental incident(s) in question been adequately addressed to the satisfaction of the court and regulatory agency?

Q19b If Q19 is "Y", is it likely that the environmental incidents could recur in current circumstances?

Q20 Has the site received complaints from neighbours on each of the last three years? Y

Q20a If Q20 is "Y", have the complaints in question been adequately addressed to the satisfaction of the regulatory agency? Y

Q20b	If Q20 is "Y", have the complaints in question been adequately addressed to the satisfaction of the neighbours?	Y
Q20c	If Q20 is "Y", is it likely that events leading to complaints could recur in current circumstances?	Y

Figure 22: Data Input Questionnaire

Data Collection Summary

Site:

Glanbia Ballyragget

Key Environmental Performance Indicators

INPUTS

2002

2003

Raw Materials Received (kilotonnes)

1900.00

1919.53

Water Used (1000 m³)

2735.64

2628.51

Electrical Energy Used (TJ)

11.05

14.38

Thermal Energy Used (TJ)

1568.40

1513.67

OUTPUTS

Commercial Production (kilotonnes)

126.88

122.76

Solid Waste (kilotonnes)

Biowastes (kilotonnes)

26883.00

21914.40

By-Products (kilotonnes)

12454.00

15186.00

Production Wastes (kilotonnes)

0.70

0.63

Greenhouse Gas Emissions

CO₂ Emissions (kilotonnes)

88.64

86.35

SO_x Emissions (tonnes)

7.41

9.64

Wastewater Emissions

Wastewater Volume (1000 m³)

2485.50

2576.49

COD Emissions (tonnes)

5304348.00

5214532.00

SYSTEMS

ISO 14001 Certification

YES

YES

Number of Environmental Audits per time period

Internal/External

13

14

Number of Complaints / Notices per time period

Written/Verbal

1

3

Figure 23: Data Collection Summary

Traffic Light Assessment				
Site Name	Ballyragget			
Business Unit	Food Ingredients			
Environmental Manager	Paula Neilan			
ISO14001 Certification	YES			
HIGH LEVEL (OPERATIONAL) RISKS				
Environmental Issue	Performance Score			
	Good	Fair	Poor	
A. Emissions to Air				
1 Combustion/Particulate Emissions		-1		
2 Noise/Vibration/Odour Emissions		1		
B. Materials Management				
4 Asbestos		-3		
C. Wastewater/Effluent				
6 Wastewater Discharges		-1		
7 BOD/COD Emissions		1		
8 Other Wastewater Emissions		-2		
D. Water Use				
9 Surface Water Discharges		-1		
12 Landspreading and Groundwater		0		
E. Waste Management & Packaging				
16 Waste Management System		0		
G. Nuisance and Complaints				
18 Regulatory Non-compliance notices		1		
19 Legal Court Cases		1		
SITE SCORE (%)				87

LOW LEVEL (ADMINISTRATIVE) RISKS				
Significant Environmental Effect	Performance Score			
	Good	Fair	Poor	
A. Emissions to Air				
3 Greenhouse Gas Management		2		
B. Materials Management				
5 Hazardous Liquids management		-3		
D. Water Use				
10 Groundwater Monitoring		1		
11 Groundwater Quality Issues		0		
E. Waste Management & Packaging				
13 Waste Management Records		1		
14 Hazardous Waste Records		2		
15 Waste Contractor Records		2		
F. Energy				
17 Energy Efficiency Management		1		
G. Nuisance and Complaints				
20 Neighbour Complaints		-1		

Figure 24: Traffic Light Assessment Ballyragget Site

Appendix Two: Codes of Practice

Glanbia Waste Management 'Duty of Care' Obligations

Glanbia's Waste Management Duty of Care requires that you ensure all waste is stored and disposed of responsibly, that it is only handled or dealt with by individuals or companies that are authorised to deal with it and that a record of kept of all waste received or transferred. Approved waste contractors are included on SAP Vendor lists. In general, Glanbia as a waste producer must ensure the proper and safe disposal of waste even after it has been passed on to another party, such as a waste contractor, recycler, local council or skip hire company. The Duty of Care has no time limit, and extends until the waste has either been disposed of or fully recovered.

A summary of relevant legislation is presented and Glanbia must ensure compliance with each of these statutory obligations, national and international.

Waste Management Acts, 1996 and 2001

As a producer of waste Glanbia are obliged to prevent or minimise the production of waste

Glanbia are responsible for ensuring the legal collection, disposal or treatment of all waste produced

Burning of waste is illegal

Waste Management (Collection Permit) Regulations, 2001

To ensure that waste is disposed of legally Glanbia must verify that all contractors used for waste collection have a current Waste Collection Permit appropriate for the type of waste being collected. This Waste Collection Permit is issued by the Local Authority in the area. Glanbia must keep a copy of the permit on file.

Waste Management (licensing) Regulations, 2000 and Waste Management (Permit) Regulations 1998

To ensure that waste is disposed of legally Glanbia must verify that the destination facilities for all waste removed from each site has a current Waste Licence or Waste Permit. Glanbia must keep a copy of the licence/permit on file.

Litter Pollution Act, 1997 and Litter Pollution Regulations, 1999

Glanbia must ensure the area surrounding each site is serviced with litter bins and the areas within the site boundaries are kept free from litter

Waste Management (Packaging) Regulations 1997 and 2003

As a large producer of waste Glanbia was obliged to segregate packaging waste and have it recycled. Packaging waste refers to: glass, paper, cardboard, plastic shrink wrap and sheeting, aluminium, steel and wood. It is illegal to send this waste to landfill.

As a major producer Glanbia are members of Repak' self compliance scheme and are obliged to report biannually on packaging waste production.

This information is provided as a guide. All Glanbia sites are expected to ensure they meet the above requirements as a minimum and strive to reduce waste production on an annual basis.

Definitions

1. CO-PRODUCT

"A co-product is a material of commerce intentionally and unavoidably created in the same process and at the same time as a principal product. Both a product and a co-product may each meet a specification or design and individually can be used directly for a particular purpose."

For example: wheat gluten, corn gluten feed, corn gluten meal, corn germs, wheat feed, corn steep liquor, pulp, concentrated fruit water, potato fibres, potato proteins, DLP to pig feed.

2. BY-PRODUCT

"A by-product is a residual material which arises during the manufacture of a product. It may be used directly itself as an effective substitute for a product or as an ingredient in another manufacturing process to create a different product."

For example: DLP Syrup to mills

3. WASTE

"Those substances or objects which fallout of the commercial cycle or out of the chain of utility. Waste is a substance or object which: a) someone wants to get rid of, b) is destined for dumping/landfilling or landspreading c) is not intended for re-use, recovery or recycling and d) can not be used for any other purpose."

In this context, any product or material (including by-products or secondary materials) which cannot be upgraded or transformed physically, chemically, biochemical, etc. to a valuable product by means of economically justified techniques or manufacturing processes can be considered as waste.

Out-of-specification products (such as products for which there is no market, articles degraded during storage or products not suitable for their original purpose, etc.) can only be considered as waste if they can not be upgraded or are destined for landspreading. (e.g. sludge). By opposition, are not considered as waste products if they can be:

1. Upgraded to valuable products (for the same application or for others) by the holder or a third party, or
2. Used for feed applications (e.g. DLP)