

FROM VOLUNTARY TO OBLIGATORY?
TRENDS IN CORPORATE ENVIRONMENTAL REPORTING

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Introduction

A decade after the publication of the first environmental report, international interest in environmental reporting seems larger than ever before. This applies both to academics and practitioners. Growing attention originates from the recent shift towards regulation on corporate environmental reporting in some countries (the Netherlands, Denmark and perhaps also Norway). In addition, external reports continue to be important means of communication for firms and sources of information for researchers. In view of changing requirements, both regulatory and societal, many firms are looking for advice and support with regard to reporting.

Some firms might regard the decision to publish an external environmental report as strategic in nature. Indeed, before embarking on this path, firms in countries where reporting is not compulsory may consider not to publish one. It requires substantial efforts, especially in the first year, to gather all the data. Furthermore,

information on products or substances might be sensitive for reasons of competitiveness. Finally, once a firm has started to publish a report, it should proceed that way because with a discontinuation one runs the risk of arousing negative publicity.

In fact, rising expectations might result in the ‘paradox of information’: the more information firms supply, the higher the request for new data, and the greater the likelihood that stakeholders ask them to live up to their promises and guarantee the accuracy and reliability of the data. Firms might end up supplying more information than originally intended and turn to external experts for verification. Reporting becomes an instrument for some governments as well, aiming to check compliance or the appropriateness of self-regulation. Although this could be associated with litigation, especially in the US context, this development is not necessarily bad to firms. To the contrary, when ‘forced’ in this way to watch the validity, the whole management system might be geared to providing the correct and relevant information, leading to an additional control on efficiency and effectiveness. This ‘all or nothing’ approach to environmental reporting does not apply in all cases, but it is a potential cycle which firms might want to reckon with.

The fact that an increasing number of firms publish a report does not mean that all of them regard it as strategic. In some cases, a report is a logical component of the environmental management system put in place, in other cases, persons or department simply take the initiative, usually because it is seen as a way to communicate about environmental issues.

This paper deals with the firms that do report, focusing first on the audience of an environmental report and, subsequently, on the evaluation systems which are being used and their results, and the tendencies in the field of environmental reporting.

Relevant stakeholders

An environmental report fits in the development in which financial objectives are not the only important variables to firms anymore; in addition to the owners’ economic aims, the interests of employees, customers and the public at large have increasingly been recognised in the course of years. The notion of ‘stakeholders’ has emerged to complement or, according to a popular current in business literature, even to supersede the concept of ‘shareholders’. Stakeholders can be defined in different ways, but

Freeman's definition is referred to most often. The one formulated by Clarkson specifies the type of relationship, emphasising the fact that the sole 'claim' of such ownership, right or interest also transforms persons or groups into stakeholders.

A stakeholder in an organization is (by definition) any group or individual who can affect or is affected by the achievement of the organization's objectives

(Freeman 1984, 46)

Stakeholders are persons or groups that have, or claim ownership, rights, or interests in a corporation and its activities, past, present or future

(Clarkson 1995, 106)

The ideas on which groups could appropriately be labelled as stakeholders has evolved over the years. The number of stakeholders has expanded likewise, as table 1 shows. The table also illustrates that the stakeholder notion is nothing new, as critics of its fashionableness do not cease to emphasise (see especially Sternberg 1997).

In the current meaning, as advanced by Freeman (1984, 55), the number of possible stakeholder has become even larger. In addition to the actors mentioned in the last row, a stakeholder map of a large organisation could also encompass government, competitors, trade associations, unions, customer advocate groups, activist groups and political groups.

Table 1 Groups labelled as stakeholders in different periods of time

<i>period</i>	<i>stakeholder groups</i>	<i>distinguished by</i>
1930s	shareholders, employees, customers, general public	General Electric
1947	shareholders, employees, customers, managers	Johnson & Johnson
1950	shareholders, employees, customers, community	Sears
1963	shareholders, employees, customers, society, suppliers, lenders	Stanford Research Institute

Source Clarkson 1995, 105-106; Freeman 1984, 31-32

Relevant to environmental reporting is that different stakeholders are distinguished when determining the information needs of the intended audience. Table 2 gives an example of such a distinction, listing the primary interests of suppliers and customers, financiers, employees, communities, authorities and environmental organisations. For each category, the environmental message which firms want to spread is given as well as the communication tools potentially available. Only for suppliers and customers, an environmental report is not a prime communication tool.

Table 2 Different stakeholders and their information needs

<i>stakeholder</i>	<i>primary interest</i>	<i>environmental message</i>	<i>communication tools</i>
supplies and customers	product quality, prices, product safety and product liability	selling environmentally sound products, willingness to contribute to consumer safety, disclosure of environmental problems, desire to meet supplier demands	marketing, product labelling, hotlines, mailings to customers and (large) suppliers
financiers	financial results, reporting of all liabilities, limitation of future liabilities	risk management, cost savings through improved environmental management	environmental report, annual account, newsletter, press information
employees	job security, salaries, pride, industrial safety	environmental policy, targets and results	environmental report, social report, annual account, notice board, internal newsletter
communities	health hazards, noise, odours, discharges to land, water and air, knowledge of business activities	pollution limitation, responsible waste management, attention to neighbours' concerns	environmental report, plant visit, newsletter, information department, press releases, ad-hoc troubleshooting groups
authorities	compliance with legislation	environmentally responsible activities, overview of costs and benefits of environmental actions	environmental report, EMAS/ISO-certification, negotiations
environmental organisations	site/neighbour information, impacts on ecosystems	improvement of environmental performance, interest in cooperation to improve matters	environmental report, visit, annual account, negotiations, newsletter, press information

Source Adapted from KPMG 1997a, 19

What the table shows in particular is diversity: of stakeholders and of information needs. To prevent a situation in which the information is so broad that it suits nobody's purposes, firms are usually advised to define a primary target group for their environmental report. Differentiation is, therefore, required.

In the Netherlands, where approximately 300 firms are obliged to report annually from 1999 onwards, two reports must be made: one to report on compliance, meant for Dutch government agencies, and another one to provide information to the public (Eerste Kamer 1997). In other cases as well, reporting requirements to authorities are fulfilled by other means, for example, by separate compliance records. Although such a distinction does not solve the problem of the multitude of stakeholders, at least one category has been eliminated.

In recent research on corporate social performance, a useful differentiation has been made between primary and secondary stakeholders. A primary stakeholder group is 'one without whose continuing participation the corporation cannot survive as a going concern', whereas secondary stakeholders are 'those who influence or affect, or are influenced or affected by, the corporation, but they are not engaged in transactions with

the corporation and are not essential for its survival' (Clarkson 1995, 106-107). Especially by their influence on primary stakeholders, secondary stakeholders can damage a firm. In a comparable way as Clarkson, but taking a normative, philosophical perspective, Phillips (1998) has distinguished respectively 'legitimate' and 'instrumental' stakeholders.

According to such a classification, primary stakeholders are shareholders, investors, employees, customers, suppliers, governments and communities (the last two comprise the so-called public stakeholder group). Secondary stakeholders are, inter alia, the media, and activist groups.

Applied to environmental reporting, a salient aspect is that the secondary stakeholders have a considerable influence. Environmental organisations, researchers, management consultants and accountants analyse the reports and often rank them, which sometimes form the basis for awards. At least in 12 countries and at the European level, environmental awards exist.¹ Through this prism, media attention and public perceptions of firms are shaped, influencing, in turn, the primary stakeholders. This does not diminish the direct importance of environmental reports to primary stakeholders, but it means that the criteria for judgement are increasingly formed by these secondary stakeholders and by their perception of primary stakeholders' information needs. The next section will examine the most common yardsticks.

Evaluation criteria for environmental reports

As a specific type of external reporting, general requirements for environmental reports are based on those for financial reports. Six important principles can be distinguished (KPMG 1997a, 20-22): understandability, relevance, completeness, materiality, conciseness and reliability. Some of them may give rise to difficult choices and conflicts, for example, when reports need to be both complete and concise (and also understandable and relevant). Different from financial reports, there is much less consensus in environmental reporting on how information should be presented, what type of (financial) indicators should be used, and what their unequivocal meaning is.

¹ Organisations do not always welcome awards. Schiphol Airport is an example: it did not want the 1996 Dutch ACC award because it might aggravate existing controversies on the environmental effects of the airport and its expansion plans. Instead, Hoogovens Steel became the winner.

These peculiarities affect the principles.

With regard to materiality, the criterion of financial size of parameters (numbers) does not suffice; the most relevant environmental indicators must be selected, in order to report on these parameters only. If done systematically, including comparisons with preceding year(s) and future developments, such an approach also furthers conciseness, understandability, relevance and reliability. The reliability of the information can be improved by independent verification. To this end, an increasing number of firms resort to a third party, especially accountants, certification bodies and environmental consultants.

In spite of mounting experience with reporting, there continues to be debate over the exact contents of environmental reports, and interpretations abound. Uniform criteria and standards are still in development. A considerable number of organisations is currently undertaking activities to standardise environmental reporting and ecoefficiency metrics, some of which are applicable to all firms, while others are sector-specific. A joint effort, the Global Reporting Initiative, was launched by the Coalition for Environmentally Responsible Economies (CERES), and includes the United Nations Environment Programme (UNEP), the World Business Council for Sustainable Development (WBCSD) and the UK Association of Chartered Certified Accountants (ACCA).

Awaiting consensus in this field, a wide diversity can still be noted, from the well-known 'green glossies' to the detailed reports. That the former category decreases, is not only due to 'learning by doing' by firms and their consultants, but also to the influence exerted by organisations evaluating and ranking the reports.

How do different organisations translate the general principles into evaluation (and rating) criteria for environmental reports? Four categorisations are summarised below, those used by UNEP/Sustainability, Tomorrow magazine, Deloitte Touche Tohmatsu and the German Institut für Ökologische Wirtschaftsforschung.² These four have been selected because they represent different approaches to some extent. UNEP/Sustainability and Tomorrow are well-known environmental report 'watchers', and there is a linkage between the two: Tomorrow gives considerable attention to the annual UNEP/Sustainability surveys and has recently started to published more

² For an overview of rating organisations, see the enumeration by Skillius and Wennberg 1998. They divided them in five categories according to different levels of ambition (single issue systems, liability systems, eco-efficiency systems, strategic systems and enviro-ethical systems). A shorter list was

elaborated analyses of firms within the same industry.

UNEP/Sustainability is one of the early movers in this field. The 50 reporting ingredients developed in 1994 (UNEP 1994) have evolved into the annual ‘Engaging Stakeholders’ benchmark survey, published since 1996. Environmental reports are scored using six categories: management policies and systems, inputs and outputs, finance, stakeholders relations and partnerships, sustainable development, and report design and accessibility. Table 3 shows these categories and their contribution to the overall score in percentages (last column).

Table 3 Rating system of environmental reports according to UNEP/Sustainability

<i>main category</i>	<i>specification</i>		<i>%</i>
management policies/ systems	top management statement environmental policy environmental management system goals and targets environmental auditing management responsibility and accountability	legal compliance research and development awards verification reporting policy corporate context	23
inputs and outputs	<i>inputs</i> material use energy consumption water consumption <i>process management</i> ecoefficiency/clean technology health and safety accident and emergency response risk management and EIAs land contamination and remediation stewardship of local habitats and ecosystems	<i>outputs</i> waste minimisation/management air emissions water effluents noise and odours transportation <i>products</i> life-cycle design environmental impacts product stewardship packaging	37
finance	environmental spending environmental liabilities market solutions, instruments and opportunities	environmental cost accounting charitable contributions	9
stakeholder relations and partnerships	employees politicians, legislators and regulators local communities investors suppliers and contractors	customers and consumers environment groups science and education other (e.g. industry associations)	19
sustainable development	technology cooperation global environment global development issues	global operating standards visions, scenarios, future trends	10
design/accessibility			2

Source UNEP/Sustainability 1997, 30

The maximum score is 194 points, with a maximum of 4 and a minimum of 0 points for

published in *Tomorrow*, January-February 1996, pp. 46-47.

each individual element, except for awards and charitable contributions, which are either 0 or 1. For small and medium-sized enterprises, it can be condensed to less items (see also Sustainability 1997).

Based on this maximum of 194 points, UNEP/Sustainability distinguishes 8 classes, in which firms' environmental report can be placed. Ranked from 'low' to 'high', these can be found in table 4. On average, the firms in the 1997 survey scored 72 points, with the largest number in the 'pressing hard' category.

Table 4 Classes of environmental reports

<i>class</i>	<i>points</i>
bottom crawlers	0-20
narrow	21-40
not so hot	41-60
pressing hard	61-80
state-of-the-art	81-100
new benchmarks	101-120
trailblazers	121-140
over the horizon	141-194

Source UNEP/Sustainability 1997, 8

UNEP/Sustainability aims to document firms' progress in environmental reporting and highlight best practice. To this end, it compares the comprehensiveness of firms' communication efforts over time. At the level of the individual firm, this is only possible to some extent as the sample has been considerably different (see the section on evaluation results below). In addition, it also sets the results against a five-stage model of corporate environmental reporting. Stage 1 consists of 'green glossies', stage 2 is characterised as 'one-off' and stage 3 as 'descriptive'; one-way communication characterises all of them. Although some of the firms covered by the survey still are in stage 3, the majority can be found in stages 4 and 5, respectively designated 'state of the art' and 'sustainability' (see table 5). It should be noted that, while based on the same survey, this model gives a more positive impression than the classes; the 5-stage model is more widely used in publicity.

Whereas stages 3 and 4 still focus on environmental performance, stage 5 embodies 'triple bottom line performance' (environmental, economic and social). Firms take their responsibility, governments can be held accountable and markets become sustainable. Such a perspective on sustainability informs and influences the approach, which is not only geared to description but also, and perhaps more, to prescription.

Table 5 Elaboration of stages 4 and 5 in UNEP/Sustainability 5-stage CER model

<i>stage</i>	<i>characteristics</i>
1 green glossy	green glossies, newsletters and videos short statement in annual report
2 one-off	one-off environmental reporting, often linked to first formal policy statement
3 descriptive	annual reporting linked to environmental management system, more text than figures
4.1 quantity	provision of full performance data on an annual basis clear targets linked to policy and auditing process corporate and site reports (optional: information on capital and operating costs and saving)
4.2 quality	two-way (passive) communication with stakeholders, e.g. feedback slips clear reporting of significant effects and performance against targets linking company activities to key environmental issues and global priorities (optional: third party verification; financial provisions; provisions of information online or on disk)
4.3 comparability	multi-way (active) communication with some stakeholders, e.g. roundtables external verification reporting against recognised global standards detailed financial information (optional: use and discussion of sectoral indicators and benchmarking; printed and online time series available)
5 sustainability	multi-way (active) stakeholder dialogue in all countries full, standardised, state-of-the-art environmental, financial and social reporting true and fair view of global and local impacts reporting in all world regions against global operating standards responsible lobbying international and external evaluation of social and environmental performance integration of full-cost accounting institutionalised 'multi-way' stakeholder engagement

Source UNEP/Sustainability 1997, 11-13

A second, regular evaluator of environmental reports is Tomorrow magazine, which has a relationship with UNEP/Sustainability. Over the years, different systems has been used, ranging from quick 'snapshots' to benchmarks based on the criteria of the UK Association of Chartered Certified Accountants. Most often, it encompasses a qualitative system of 'star-rating', awarding one to five stars for different items; 1 star is poor/inadequate, whereas five is excellent/comprehensive. On the basis of such checklists (see table 6), Tomorrow draws an overall conclusion, sometimes by summing the number of stars.

Table 6 Two checklists used by Tomorrow to evaluate environmental reports

<i>checklist 1 (maximum score of 75 points, 5 each)</i>	<i>checklist 2 (no scoring of awarded stars)</i>
environmental policy (including codes, audience)	environmental policy (degree of detail, EMS)
management (commitment, systems, standards)	who's in charge (named posts, individuals, contacts)
narrative (e.g. impacts of core business)	style/user-friendliness (easy of reading, clarity)
factual data (good/bad news, global/site level)	facts and figures (overall level, detail, precision)
historical trends (commentary, explanations)	inputs/outputs (systematic information)
targets (global/site, preferably quantified)	targets (including past, present and future)
performance against targets	local community (stakeholders)
explanation of variances	site-by-site (reports, figures, targets for each)
financial linkages (inclusion in financial report)	mea culpa (admission of failure/responsibility)
liabilities/provisions (accounting policies, risks)	legal compliance (including fines, prosecutions)
environmental expenditures	costings (estimates of expenditures/savings)
external verification	independent verification/audit
sustainability	global citizen (responsibility, sustainability issues)
life cycle/mass balance/eco-balance sheet	life-cycle assessment/product stewardship
extras (disks, newsletters, videos - their quality)	request for feedback

Source derived from respectively Tomorrow, May-June 1996, 58-59 and October-December 1995, 50-51

Comparing these two different checklists, a development into the direction of 'harder', more precise information can be noticed (the first column is more recent than the second). In the older list, more attention is paid to the design, style and communication aspects. In 1997, Tomorrow started to rely more on the UNEP/Sustainability surveys in their articles on environmental reporting. This is combined with brief examinations of environmental reports (under the banner 'Tomorrow takes five' or another number of reports). The strength of Tomorrow is its considerable audience within and outside the business community.

Using the 50 UNEP/Sustainability criteria as a starting point, but having considered a range of other accountancy and business guidelines, Deloitte Touche Tohmatsu developed a corporate environmental report score card. It has different objectives than UNEP/Sustainability: firms can use it as a benchmark tool. While designed to support practitioners, the rating system serves both descriptive and prescriptive purposes.

The score card consists of 8 categories: corporate profile, report design, environmental impact/data, environmental management, finance/ecoefficiency, stakeholder relations, communications, and third-party statement. Table 7 shows these categories and their contribution to the overall score in percentages (last column). Each element can get a maximum of 4 and a minimum of 0 points; a weighted score will then be calculated.

Table 7 Corporate environmental report score card developed by Deloitte Touche Tohmatsu

<i>main category</i>	<i>specification</i>	<i>%</i>	
corporate profile	corporate context to understand environmental performance management commitment consideration of significant environmental aspects environmental policy and commitment	10	
report design	scope of the report, including limitations rationale behind the choice of environmental performance indicators reporting and accounting policy description of relatedness/pertinence extent of coverage	15	
environmental impact/ data	inputs emissions waste/residual products packaging transportation	product stewardship land contamination/remediation environmental effects other significant factors	20
environmental management	environmental goals and targets environmental management system integration into the business process contingency planning/risk management	compliance research and development life cycle design environmental impact assessment	20
finance/ecoefficiency	environmental costs/investments environmental liability government penalties/incentives	future costs/investment needs business opportunities and risks ecoefficiency measures	10
stakeholder relations	employees customers and consumers	regulatory bodies contractors and suppliers	10
communications	graphic attractiveness/appeal	user feedback	10
third-party statement	scope and findings of third-party audit		5

Source Deloitte Touche Tohmatsu 1997

Comparing the two lists of criteria, Deloitte Touche Tohmatsu is much more focused on business than on the issue of sustainable development in a broad sense. The ‘sustainable development’ category in the UNEP/Sustainability list, for which 10 per cent of the overall score can be obtained, is lacking completely. In addition, the Deloitte Touche Tohmatsu system includes less stakeholders and they have less weight in the score.

Finally, accountancy principles of external reporting occupy a prominent place; this is especially notable in the items on report design. They deal with the scope of the report and its limitations; the rationale behind the choice of environmental performance indicators, how they are used for management control, what conclusions can be derived from them, how they impact on decisions and how the effectiveness of the indicators can be and is improved. Other items in this category focus on the firm’s reporting policy and its accounting principles; and the description of relatedness and pertinence – how relevant and consistent the information is.

From a research perspective, an inherent disadvantage of the Deloitte Touche Tohmatsu system is the self-diagnosis – there is no external assessment of

environmental reports. It should also be noted that (environmental) management consultants and accountants are cautious in publishing detailed information about firms in general, and negative information in particular. Advice and verification is or may become an important business activity and all firms are potential or actual clients. Discretion is, therefore, not only a contractual matter – as far as current clients are concerned – but also an important asset and a sign of reliability. Research activities carried out by consulting and accountancy firms usually serve the purpose of surveying the market, seeking publicity and attracting new clients. If they publish information on specific firms, it will either be presented as disguised cases or as aggregated data (for example, at the industry level).

A fourth rating system, developed by the Institut für Ökologische Wirtschaftsforschung, also pays considerable attention to reliability and relevance. Designed to evaluate German environmental reports and EMAS statements, it uses three broad categories: individual elements of the report, overall quality of contents and communicative quality. Their respective weight in the overall score (500 points) is 75, 15 and 10 per cent. Table 8 shows the contents and the relative importance of the elements.

Table 8 Evaluation scheme of environmental reports used by the IÖW

<i>item</i>	<i>specification</i>	<i>%</i>
individual elements of the report	general economic and environmental data about site/corporation	5
	environmental policy, guidelines and history of environmental protection	5
	environmental management system (organization, competences, incentives)	5
	data about material/energy flows (mass flows, eco-balancing, methods used)	10
	ecological aspects of products/services (product development, life-cycles)	15
	analysis of environmental problems (comparisons with objectives, EPIs, laws)	10
	environmental programme/objectives (performance, measures, objectives)	15
	finance (expenses and savings, market successes)	5
overall quality of contents	communication with target groups (current and future activities)	5
	reliability (audits, opinions of third parties, awards, unsolved problems)	5
	relevance, clarity, verifiability	5
communicative quality	continuity and comparability (over years and within industry)	5
	text/language (value of headings, vivid style, rapid understandability)	5
	graphic layout (overall attractiveness, quality of pictures/graphs, typography)	5
	presentation of product development	

Source Fichter, Clausen and Alpers 1996, 10-12

This system is somewhere in between UNEP/Sustainability and Deloitte Touche Tohmatsu. Its greatest added value is the extensive analysis of German reports, which international surveys usually exclude because of the language barrier – considering only the reports published in English. And if they are included in surveys, the information on

individual firms is not disclosed. The IÖW divided the firms in four categories: unsatisfactory (100-199 points), satisfactory (200-299), good (300-399) and very good (400-500).

The four evaluation systems examined above are not the only ones. In the past five years in particular, a large number of organisations and individuals have started to analyse and compare environmental reports, using different variants. Some of these results will be mentioned below when dealing with the tendencies in environmental reporting. This section has, however, ventured to give the basics of evaluation and rating methods, characterising the different components, their respective weights, the backgrounds, strengths and weaknesses.

The systems are basically divided along two dimensions. The first is the division between a more prescriptive focus on sustainability, in which business is assumed to play a large role, versus a more descriptive inventory of how firms deal with environmental issues. Related to this, the second difference includes the emphasis placed on the principles of (environmental) reporting, especially relevance, reliability, materiality and consistency. Whereas the first dimension is likely to persist or even widen, in the second case a tendency can be observed towards the incorporation of these principles and the increasing recognition of their importance.

Results of evaluating environmental reports

There are many ways to categorise empirical research on environmental reporting. Two relevant aspects have already been mentioned in the preceding section: the *normative character* of the approach and the importance attached to the *principles* of external reporting. A third distinction refers to the *criteria* on the basis of which the environmental reports are collected. This could be a country, a sector in one or more countries, or firms with a specific size.

Fourthly, the way of *data collection* differs. The most prevalent method is to gather as much reports as available which fit into the category defined by the researchers. Another is to start with a fixed number of firms, usually selected by a non-environmental criterion such as sales, and then scrutinise this group for their environmental reports. The two methods yield different results: the first leads to broader insights into tendencies and notes the increasing number of reports, whereas the second

allows for more scientifically reliable conclusions regarding the overall development within the specific group of firms, including the number of non-reporting firms.

Many surveys on environmental reporting fall in the first category, although they not always tend to be clear about it. Others start according to the second method, selecting a set of firms on the basis of specific criteria, but some of them end somewhere in between as it requires considerable time and effort to check some firms several times until one knows for sure that the information is correct. The second type especially offers advantages if the research is repeated in different years; good comparisons can then be made.

On the basis of these different characteristics, some of the research on environmental reporting can be evaluated. Table 9 summarises the publications which will be briefly examined below by indicating their selection criteria and characteristics. These five have been chosen because they represent different approaches to evaluate environmental reports. Hence, it is not an exhaustive overview: comparable surveys, especially at the country and sector levels, and smaller surveys do exist.³

Table 9 Selection criteria and characteristics of some publications which evaluate environmental reports

<i>publication</i>	<i>countries</i>	<i>sectors</i>	<i>firm size</i>	<i>rating</i>	<i>info on firms</i>
KPMG (1997b)	large number	large number	all sizes	no	no details
UNEP/Sustainability (1997)	large number	large number	all sizes	yes	some details
Tomorrow magazine (various issues)	large number	sector-wise	all sizes	sometimes	some details
Fichter, Clausen and Alpers (1996)	Germany	large number	all sizes	yes	many details
Davis-Walling and Batterman (1997)	US	large number	Fortune 50	yes	many details

The broadest and most general survey has been carried out by KPMG in 1993 and 1997. The 1997 study covered 220 environmental reports and 625 financial reports (with response rates of respectively 24 and 71 per cent) of firms in a large number of countries (12) and sectors (17). The selection criterion was, however, not clearly indicated in the report other than that it encompassed the ‘world’s leading companies’ (KPMG 1997b, 6). The research compiled the inventarisations already made by most of the national KPMG organisations. Comparisons with 1993 were hindered by the fact that the countries in the surveys differed to some extent. Overall conclusions confirmed the increasing number and quality of environmental reports, especially in chemicals, oil and

³ In addition, a forthcoming publication by Benchmark Environmental Consulting contains the results of an analysis of the Fortune global 100 (*Business and the Environment*, July 1998, p. 4). Of these firms, 39 had environmental reports; 6 mentioned it in their annual reports. Firms in the chemical sector had the most comprehensive reports, closely followed by electronics; the retail sector ranked last.

gas, and utilities, in both North America and Europe. It provided no information at all at the firm level.

Such information was included by UNEP/Sustainability. These organisations have tended to focus on the best environmental reports, especially in the 1996 survey, which colours the overall results. The selection criteria for the 100 corporate environmental reports evaluated in 1997 remain rather unclear; there was a spread in countries (18 different ones) and sectors (14) (Elkington, Kreander and Stibbard 1997, 104-105), and considerable differences in size.

Twenty-four firms were included in all surveys; comparing 1997 with 1996, 10 remained stable, 9 showed progress and 5 scored lower. As already mentioned in the preceding section, the average score was 37 per cent, 72 points out of 194. With regard to sectors, interesting differences could be found in the car industry, where Volvo and General Motors performed considerably better than the other firms, according to the survey criteria (see table 10).

Table 10 Scores of firms' environmental reports in different sectors

<i>automobiles</i>	<i>points</i>	<i>chemicals</i>	<i>points</i>	<i>oil</i>	<i>points</i>
Volvo	93	BASF	87	Neste	98
General Motors	92	DSM	84	Sun	92
Fiat	68	Monsanto	78	Phillips Petroleum	88
Volkswagen	54	Dow Canada	76	Statoil	86
Toyota	49	Bayer	76	Norsk Hydro	75
Daimler-Benz	47	Akzo Nobel	76	Texaco	75
		Rhône Poulenc	75	British Petroleum	66
<i>pharmaceuticals</i>		ICI	72	Royal Dutch/Shell	64
Baxter	102	Sasol	69	Petrofina	62
Novo Nordisk	97	Henkel	65	PVDSA	61
Bristol-Myers Squibb	90	Elf Atochem	63	Exxon	60
Glaxo Wellcome	81	Union Carbide	62	Saga	33
Astra	80	DuPont	56		
Eli Lilly	66	NCP	53		
Roche	48	Novartis	32		

Source UNEP/Sustainability 1997, 17-20

In other sectors, such as oil, chemicals and pharmaceuticals, the differences were even larger. The firms ranking highest were, however, mostly small firms. This applies particularly to the oil industry, where the largest multinationals - Shell, Exxon and British Petroleum - are almost in the same range. A benchmark usually implies that relevant competitors are compared, which implies a different approach than the one taken by UNEP/Sustainability. Therefore, a good overall assessment cannot be made as a

systematic inquiry into all firms in a sector or with a certain size is lacking.⁴

In various articles, Tomorrow magazine made sectoral comparisons, usually based on UNEP/Sustainability data and written by Sustainability staff. Especially the evaluation of environmental reporting in the automobile industry comprised an analysis of all important firms.⁵ This overview showed that the others (those which were not included in table 10) did not issue environmental reports, although Ford, and the French and Japanese firms had issued brochures.

Over the years, Tomorrow has followed trends in environmental reporting. It started with comparisons of a diversity of firms (different sectors, sizes and nationalities) and moved to the analysis of sectors, usually on the basis of qualitative criteria. A benchmark on eight banks used checklist 1 from table 6 and compared reports from different years rather extensively. Although two banks scored higher and lower than average (respectively SKA Zurich and Deutsche Bank), the rest fell in the same range.⁶ Reflecting current developments, the magazine has recently started to pay attention to verification and to reporting on the Internet.

In view of national differences, many surveys continue to focus on the state of environmental reporting in specific countries (see, for example, those carried out by a number of environmental consultants and accountancy firms, such as Deloitte Touche Tohmatsu and KPMG). In many cases, these do not provide information on specific firms. An exception to this rule has been the Institut für Ökologische Wirtschaftsforschung.

The IÖW analysed 97 environmental reports published in Germany in 1994 and 1995, and ranked them according to the method in table 8. In this process, they were assisted by a jury consisting of different users and producers of reports, and scientists. Only one food and one textile firm scored 'very good'. Among the 17 firms with a 'good' report, the food sector ranked high again, the first chemical firm could be found at the 16th place overall (Fichter, Clausen and Alpers 1996). The reports of 25 firms were labelled as 'unsatisfactory'; one report even remained unclassified as it scored less than required for this category.

The analysis covered both corporate and site reports, and reports published by small- and medium-sized enterprises (SME). Comparing these three types for the

⁴ A research project currently being carried out at the author's institute ventures to overcome these deficiencies and arrive at a meaningful conclusion considering relevant competitors.

⁵ *Tomorrow*, July-August 1997, pp. 60-64

different categories, ‘very good’ encompassed one corporate and one SME report, the category ‘good’ was dominated by corporate reports, followed by site and SME reports (‘unsatisfactory’ showed the opposite order). An almost equal division between the three types could be found with regard to the reports labelled as ‘satisfactory’.

The final publication mentioned in this section involves environmental reporting by the 50 largest US firms, thus focusing on one country and a particular firm size (Davis-Walling and Batterman 1997). Taking the Fortune list, 24 firms turned out to publish an environmental report in 1993-1994; with two firms starting to publish in 1995, and three others considering it. Although some years have passed since the reports were published, the authors’ method still seems valuable. They not only ranked the firms, scoring the different components in seven categories, but also linked this information to the sectors. The study took account of multi-sectoral firms as well, which means that firms could belong to different sectors. Table 11 shows a part of this comparison.

Table 11 Sectoral comparison of environmental reporting by US Fortune 50 firms

<i>sector</i>	<i>reporting percentage</i>	<i>policies and investment</i>	<i>regulatory information</i>	<i>pollution prevention</i>	<i>total score</i>
lumber and wood products	100	7.7	6.0	7.7	25.3
paper and allied products	100	7.3	5.0	8.0	24.0
food and kindred products	33	5.0	2.7	7.0	17.0
transportation equipment	33	6.7	7.0	5.3	22.0
chemicals and allied products	89	8.0	5.8	7.4	25.4
measurement, analysis, control equipment	80	7.0	5.8	6.3	22.8
wholesale trade	75	7.0	4.0	7.0	20.3
oil and gas extraction	50	7.5	4.3	6.3	21.0
petroleum refining	43	8.7	5.3	5.3	23.7
pipelines, excluding natural gas	50	8.0	4.4	5.8	21.8
industrial machinery/computer	33	7.0	6.0	9.0	25.0
average	48	7.2	5.3	6.8	22.8
highest possible score	100	11.0	10.0	9.0	38.0

Figures printed in bold represent statistical significant differences from mean

Source Davis-Walling and Batterman 1997, 872

The reporting percentages showed considerable differences, ranging from 100 per cent in paper and wood sectors, 89 per cent in chemicals, 50 per cent in oil and gas, to 33 per cent in food and transportation equipment. Besides being notable for its high percentage, the seven firms in the wood and paper products also score high in the ranking. This relatively high score also applies to chemicals, industrial machinery/computers and petroleum refining. Firms with high scores were DuPont (32

⁶ *Tomorrow*, May-June 1996, pp. 58-60

points), General Motors and Kodak (both 30), Dow and Georgia-Pacific (both 29), and Merck and Rockwell (both 28 points).

An approach such as this one allows for more indepth analysis. Hence, the more focused the approach, the more relevant and reliable the information is likely to be.

Conclusions

‘From voluntary to obligatory’ hints at a three-fold tendency in the field of environmental reporting:

1. a few countries have started to impose legal obligations on some firms to annually publish an environmental report;
2. a less stringent, implicit societal demand to be open on environmental issues has come from other stakeholders – both primary and secondary; and, related to this,
3. those firms which do report experience an increasing need to move from environmental statements and intentions to quantified, comparable, verifiable and even verified information. To go beyond the phase of ‘green glossies’ requires administrative and organisational changes, and even the application of the logic of financial systems to environmental aspects.

‘From voluntary to obligatory’ can also be applied to the research on environmental reporting. Over the years, evaluation and rating systems have developed and become more sophisticated. In line with the evolution of environmental reporting, researchers might see it as an obligation to advance beyond the stage of observing the increasing number of reports and counting the individual components and items. This requires a more systematic collection and examination of reports, using specified criteria for the selection of firms, and paying more attention to reliability, consistency and relevance.

Researchers should continue to reckon with the observation that nationality, sector and size matter in environmental reporting. Before collecting the reports, the aspects to be studied in particular must be carefully delineated in order to choose the sample of firms accordingly. Evaluation and rating systems usually feed the practice of environmental reporting in view of the close relationship and the practical orientation of many analysts. Hence, meeting these stricter requirements will have implications for both practitioners and academics.

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