International Journal of Business, Human and Social Sciences
ISSN: 2517-9411
Vol:4, No:6, 2010

GRI –reporting Chemical Sector's Environmental Item Disclosures

M. Suutari

***Abstract*—**In this content analysis research note the aim was to explore to how sustainability and especially environmental issues are conveyed into environmental items in annual reports and disclosures. As The Global Reporting Initiative (GRI) is a globally wide multi-stakeholder process, the enterprises using voluntarily GRI framework are considered to be aware of sustainability and environmental concerns. The findings were that although these enterprises included in an environmentally sensitive industry sector and had special capabilities to consider environmental issues there were few GRI-reporting enterprises presented substantially detailed environmental items in audited financial statements. There were only slight differences between publishing years 2008 and 2009 - the beginning years of economic turmoil. The environmental issues seemed not to be considered substantial enough for financial reporting as a basis for concerning investment or voting decisions.

***Keywords*—**Environmental, reporting, financial, GRI.

I. Introduction

ECONOMIC indicators are the valid incentives for management especially in challenging economic turmoil. At the same time it has been evident that sustainability issues are not to be neglected if the enterprise is going to be regarded as a serious corporate citizen. However the requirements for capabilities of management and accounting systems when defining, assessing and estimating the relevant issues are extremely demanding. As Stone & Delistraty [21] points out there is over 100,000 chemicals in commercial use with a mounting amount in every level of production chain and finally in consumer products. Both environmental and health not to mention the risks in money terms can be enormous.

The information gathering of environmental issues and effects to multiple stakeholder groups is a difficult task [e.g. 1,12]. The Global Reporting Initiative's (GRI) mission is to create a universal reporting framework and a language in which a discourse and learning about sustainability performance could be carried out [cf. 3]. The GRI Guidelines draw on three-dimensional definition of sustainability using performance indicators to measure the economic, environmental and social dimensions, and a set of integrated indicators (cf. triple bottom line, TBL, Elkington) [6]. The enterprises applying GRI-reporting framework are supposed to be aware also of the possible environmental issues concerning financial positions.

In this content analysis research note the aim was to explore how GRI-reporting chemical sector enterprises presented environmental items i.e. were the environmental issues regarded to affect to the reporter's financial outcome and position and hence conveyed into the financial results.

II. Financial Statements and Environmental Item Disclosures

Formal financial disclosure is a starting point in valuing enterprises' results. This is evidenced empirically by various capital market research studies. For an early empirical example, Blacconiere & Patten [2] examined the market reaction in the chemical industry following the chemical leak in Bhopal. Capital market investors viewed environmental disclosures as a positive sign. Also "public pressure" after hidden problems existed when a significant reduction in stock market valuation followed release of toxic release inventory (TRI) data [13].

However, as Linsley & Shrives [15] noted after exploring a sample UK non-financial companies it still seems that companies with lower levels of environmental risk are disclosing greater amounts of risk information. An implication of this result was that it supported the view that stakeholders are not being provided with sufficient risk information, particularly by those companies with higher levels of risk.

The necessity that also financial market receive and value the environmental information have become increasingly weighty. Also the market incentives for environmental management to enhance investments to reduce future environmental costs, liabilities, or risks should be strong. Repetto [19] showed a pattern of difficulties in information accuracy in disclosures from the U.S. pulp and paper industry, the oil and gas producing industry, the electricity generating industry and the hard rock mining industry. Despite long-established securities law and regulations requiring such disclosures, companies had not fully complied even known environmental exposures in these environmentally-sensitive industries. Further governmental actions were encouraged, to exert a useful influence on corporate management.

Mobus [18] illustrated the potential of mandatory analysis showing a negative correlation between the mandatory disclosure of environmental legal sanctions and subsequent

M. Suutari is PhD Student with Department of Accounting and Finance, Aalto University School of Economics, (former Helsinki School of Economics), Runeberginkatu 14-16, 00100 Helsinki, Finland (corresponding author to provide e-mail: Minna.Suutari@aalto.fi).

regulatory violations using firms in the US oil refining industry. The results suggested that progressive and improved regulation could increase the volume and quality of Corporate, Social, Ethical and Environmental Reporting (SEER) disclosures. However, the study revealed diverse strategies, ranging from dismissal to concealment. As regulation improves and enforcement expectations rise, it becomes more difficult to dismiss compulsory reporting norms.

Llena et al. [16] found that environmental reporting increased in Spanish companies belonging to ecologically sensitive sectors during the last decade, the most relevant in year 2002, when the compulsory accounting regulation came into force. This development they suggested to confirm the application of the legitimization theory, 'which leads them to offer greater and more detailed environmental information that, in general, has a positive character' Llena et al. [16].

Criado-Jime´nez et. al. [5] took a positive view when studying the effectiveness of improved the ICAC-2002 standard, which obliges Spanish companies to make environmental disclosures in their financial statements. The results suggested that progressive and improved regulation could increase the volume and quality of SEER disclosure. Although there still remained the problems: reporting was seemed to be used to manage the public impression of the environmental performance of the firm, reporting good news rather than bad news, disclosing ritual information and selecting the information to be disclosed in each reporting media. Enforcement mechanisms were conjectured to likely play a determining role in the level of compliance with the regulation. To the Freedman and Stagliano [8] assessment a need to enforce existing SEER regulations before new standards were referred.

In European Union (EU) the mandatory sustainability related reporting rules have been developed towards more explicit form. According to the Recommendation of 30 May 2001 of the European Commission on the recognition, measurement and disclosure of environmental issues in the annual accounts and annual reports of companies (2001/453/EC) identifies the type of environmental information that is appropriate to be disclosed to the extent that they may have consequences on the financial position of the enterprise. The disclosure should include information of environmental and social aspects necessary for an understanding of the company's development, performance and position (Directive 2003/51/EC of the European Parliament and of the Council of 18.6.2003 Accounting Modernisation Directive).

Recommendation of 30 May 2001 includes definitions of environment, environmental expenditure, costs, lialibilities; disclosure in income statement and balance sheet. Increased consistency should be achieved by amendments, consistent with current international best practice, to the specific requirements concerning the format and content of an audit report. The requirement is that an audit opinion states whether the annual or consolidated accounts give a true and fair view in accordance with the relevant financial reporting framework (The EU Modernization Directive 2003/51/EC). Different countries, such as Denmark, Sweden, Finland, Portugal, France and Spain have adapted their accounting legislation to conform with the European Recommendation (2001/453/EC)1, enacting an obligation for companies to report on environmental issues in their financial statements. [14].

Also in the United States the requirements for Securities Exchange Commission (SEC) filings are moved towards fair presentation, i.e. a key objective of the Sarbanes-Oxley Act (SOA) was that the financial statements fairly present the financial condition and results of operations for the periods presented in the reports. The SEC explicitly stated 'that fair presentation is not limited to a reference that the statements have been presented in accordance with generally accepted accounting principles (GAAP) [17].

Disclosure of environmental exposures is governed with specific requirements in the United States both by the SEC's core rules on materiality and by specific requirements regarding environmental liabilities and compliance with federal and state environmental regulations. General disclosure requirements explicitly include forward-looking statements. Gray and Symon [9] argue that accountants trained as statutory auditors are in a good position to assess the extent to which environmental information systems provide sufficient evidence to come to conclusions about the reliability of reported data. EU modernization directive 2003/51/EC states: 'Article 51a (c) an audit opinion which shall state clearly the opinion of the statutory auditors as to whether the annual accounts give a true and fair view in accordance with the relevant financial reporting framework and, where appropriate, whether the annual accounts comply with statutory requirements'.

III. Objective

In this content analysis study the aim was to explore how GRI-reporting chemical and conglomerate sector enterprises presented environmental itemss i.e. their financial performance and position in audited sections of annual reports; were the environmental issues regarded to affect to the reporter's financial outcome and position and hence conveyed into the financial results.

IV. Data and Methods

The source of empirical data was register of Global Reporting Initiative; publicly available GRI Reporters List. The list is being updated on a regular basis (http://www.globalreporting.org). The enterprises which published annual report in English language (year cross sectional 2009 and 2008 if GRI-report published) were included only. Translated published versions were considered as a part of enterprises' communication. Enterprises without web published externally independently audited annual report or financial accounts were excluded.

The reports were inspected with the search-function of the

Adobe Acrobat Reader. The independent auditors' reports were examined at the beginning to get information of audited sections of the reports. The pages of environmental items in consolidated financial statements were defined. After that concentrating the sections in the report i.e. Income statement, Balance sheet, Cash Flows statements, Notes to the financial statements, Management report which could also be called Administration / Directors' report / CEO's Statement / Report of the Executive Board etc. However the report intended in this study was not the Management's Report on Internal Control over Financial Reporting required by Sarbanes Oxley Act of 2002, or SOX 404 in USA. If a certain section i.e. management report included to the audited pages it was included into this study, otherwise not.

The decision categories were adopted from standards which enterprises were following and the information was therefore defined and coded accordingly [cf.10]. The content analysis practiced by determining the presence or absence of environmental related particularly financial items. The presence of an item was given the value '1' or '2' if it was reported, and given the value '0' if not. The enterprise could describe its environmental matters quite widely, but without auditing the coding in this study was 'E' (The Table I). All the data collection and analyses were carried out by the author.

TABLE I
CODING FOR CONTENT ANALYSIS

Category	Coding	Example
Not audited section of the report	E	
No finding of the word "environment/al"	0	
Qualitative valuations	1	'Management performs regular reviews to identify environmental risks and to ensure that the systems in place are adequate to manage those risks.' or 'Provisions for risks and changes were reduced due to lower'
Quantitative valuations in money terms	2	'Environmental remediation and accretion of asset retirement obligations 5 millions of U.S. dollars' Also the range informed i.e. Incidentals included in operating income are as follows: 'Charges related to major legal, antitrust, and environmental cases (29)'

TABLE II
CHEMICAL SECTOR'S ENTERPRISES, REPORTS PUBLISHED 2009 (N=22)

Name of reporting unit	Country (HQ)	Stock Exchange listed [a]
Akzo Nobel N.V.	Netherlands	NYSE Euronext Amsterdam Stock Exchange, NASDAQ
Albemarle Corporation	USA	NYSE New York Stock Exchange
Asahi Kasei Corporation	Japan	Tokyo Stock Exchange Group,
BASF SE	Germany	Deutsche Börse, Swiss Exchange, London Stock Exchange
Cheminova A/S	Denmark	NASDAQ OMX Copenhagen
Clariant Ltd	Switzerland	SWX Swiss Exchange
Cognis GmbH	Germany	NYSE Euronext Luxembourg
Dow Chemical Co	USA	NYSE New York, Chicago
Royal DSM N.V	Netherlands	NYSE Euronext Amsterdam Stock Exchange
Ecolab Inc.	USA	New York Stock Exchange
Empresa Nacional del Petroleo S.A	Chile	a state owned company (Private Company)
Engro Chemical Pakistan Limited	Pakistan	Stock Exchanges of Karachi, Lahore and Islamabad
Hanwha Chemical Corporation	Republic of Korea	Korean Stock Exchange
Johnson Matthey Plc	United Kingdom	London Stock Exchange
LG Chem Ltd.	Republic of Korea	Korea Stock Exchange, the London Stock Exchange
Nitto Denko Corporation	Japan	Tokyo Stock Exchange
Orica Limited	Australia	Australian Stock Exchange
Oxfam GB / Croda International Plc	UK	London Stock Exchange
Perstorp Holding AB	Sweden	Private equity firm
Sasol Limited	South Africa	Johannesburg Stock Exchange, New York Stock Exchange
Solvay S.A.	Belgium	NYSE-Euronext Brussels
Wacker Chemie AG	Germany	Frankfurt Stock Exchange

V. FINDINGS

Financial accounting provides the foundation for information to external stakeholders through disclosure. The statements of financial position, or other financial statements, are expected to show the financial situation of the organization in all material respects. The findings from this data were that few GRI-reporting enterprises presented substantially detailed environmental items in their audited financial statements. Reporting presentations took place mostly in the notes of financial statements. The information reported was generally risk managing oriented, less were forward looking scenarios of environmental related future benefits or income scenarios.

It seems that in the group of chemical enterprises there could be seen a slight increase in the number of GRI-reporting companies. The particularly companies modes of reporting between these two years were however remarkably stable. Keeping in mind the sector specific risks and possibilities of serious effects the reporting practice can still be seen modest. As e.g. Sinclair-Desgagné & Gozlan [20] describes the enterprises' propensity to report more qualitative about possible risks than estimate the quantitative amounts which may be caused from the accidents. The situation in this data sets was the lacking specified disclosures in the Income Statements, Balance Sheets or Cash Flow Statements. Also there were difficulties with Accounting Policy disclosings concerning environmental issues. The financial reporting and then auditing principles should be the same for all enterprise risks: serious or material effects ought to be reported. If they are not, it can be interpreted that the effects towards the enterprises financial positions are anticipated to be not

International Journal of Business, Human and Social Sciences
ISSN: 2517-9411
Vol:4, No:6, 2010

material so to say the actualizing is not going to change investors' or decision maker's in money terms grounded decisions. The findings in this study were quite clear hence the possible low consistency in the adoption of materiality thresholds of environmental items in the financial point of view may not not explain entirely the missing reporting [c.f.4,11].

TABLE III
CHEMICAL SECTOR'S REPORTING BY SECTIONS OF THE ANNUAL REPORTS IN 2008 AND 2009

Name of reporting unit	Year	Income statement	Balance sheet	Cash Flow	Notes	Management report
Akzo Nobel N.V.	2008	0	0	0	2	E
Akzo Nobel N.V.	2009	0	0	0	2	E
Albemarle Corporation	2009	0	0	2	2	E
Asahi Kasei Corporation	2008	2	0	0	2	E
Asahi Kasei Corporation	2009	2	0	0	2	E
BASF SE European company (SE)	2008	0	0	0	2	2
BASF SE European company (SE)	2009	0	0	0	2	2
Cheminova A/S /Auriga Industries A/S	2009	0	0	0	1	1
Clariant Ltd	2008	0	0	0	2	E
Clariant Ltd	2009	0	0	0	2	E
Cognis GmbH	2008	0	0	0	2	2
Cognis GmbH	2009	0	0	0	2	1
Dow Chemical Co	2008	0	0	0	2	E
Dow Chemical Co	2009	0	0	0	2	E
Royal DSM N.V	2008	0	0	0	2	E
Royal DSM N.V	2009	0	0	0	2	E
Ecolab Inc.	2008	0	0	0	2	E
Ecolab Inc.	2009	0	0	0	2	E
Empresa Nacional del Petroleo (ENAP) S.A	2008	0	0	0	2	E
Empresa Nacional del Petroleo (ENAP) S.A,	2009	0	0	0	2	E
Engro Chemical Pakistan Limited	2008	0	0	0	0	E
Engro Chemical Pakistan Limited	2009	0	0	0	0	E
Hanwha Chemical Corporation	2008	0	0	0	1	E
Hanwha Chemical Corporation	2009	0	0	0	0	E
Johnson Matthey Plc	2008	0	0	0	2	E
Johnson Matthey Plc	2009	0	0	0	2	E
Chem Ltd.	2008	0	0	0	0	E
LG Chem Ltd.	2009	0	0	0	0	E
Nitto Denko Corporation (Nitto Denko Kabushiki-gaisha)	2008	0	0	0	0	E
Nitto Denko Corporation (Nitto Denko Kabushiki-gaisha)	2009	0	0	0	0	E
Orica Limited	2008	0	0	0	2	E
Orica Limited	2009	0	0	0	2	E
Oxfam GB / Croda International Plc	2009	0	0	0	2	E
Perstorp Holding AB	2008	0	0	0	1	1
Perstorp Holding AB	2009	0	0	0	1	1
Sasol Limited	2008	0	0	0	2	E
Sasol Limited	2009	0	0	0	2	E
Solvay S.A.	2008	0	0	0	2	E
Solvay S.A.	2009	0	0	0	2	E
Wacker Chemie AG	2009	0	0	0	2	1

TABLE IV
FREQUENCIES OF CHEMICAL CECTOR'S REPORTING BY SECTIONS OF THE ANNUAL REPORTS IN 2008 AND 2009

Year	Modes of reporting	Income statement	Balance sheet	Cash Flow	Notes	Management report
2008: N=18	Qualitative frequency	0	0	0	2	1
	Quantitative frequency	1	0	0	13	2
	Qualitative %	0,0	0,0	0,0	11,1	5,6
	Quantitative %	5,6	0,0	0,0	72,2	11,1
	Sum of Qualitative % or Quantitative %	5,6	0,0	0,0	83,3	16,7
2009: N=22	Qualitative frequency	0	0	0	2	4
	Quantitative frequency	1	0	1	16	1
	Qualitative %	0,0	0,0	0,0	9,1	18,2
	Quantitative %	4,5	0,0	4,5	72,7	4,5
	Sum of Qualitative % or Quantitative %	4,5	0,0	4,5	81,8	22,7

TABLE V
CHEMICAL SECTOR'S REPORTING IN THE NOTES PUBLISHED IN 2008 AND 2009

Name of reporting unit	Year	Accounting Policies	Income related	Cost related	Asset related	Liability related	Cash Flow related	Notes
Akzo Nobel N.V.	2008	1	0	2	0	2	0	2
Akzo Nobel N.V.	2009	1	0	2	0	2	0	2
Albemarle Corporation	2009	1	0	2	0	2	0	2
Asahi Kasei Group	2008	0	0	0	2	0	0	2
Asahi Kasei Corporation	2009	0	0	0	2	0	0	2
BASF SE European company, Societas Europaea	2008	1	0	2	0	2	0	2
BASF SE European company, Societas Europaea (SE)	2009	1	0	2	0	2	0	2
Cheminova A/S /Auriga Industries A/S	2009	0	0	0	0	1	0	1
Clariant Ltd	2008	1	0	1	0	2	0	2
Clariant Ltd	2009	1	0	1	0	2	0	2
Cognis GmbH	2008	1	0	2	2	2	0	2
Cognis GmbH	2009	1	0	2	2	2	0	2
Dow Chemical Co	2008	1	0	2	0	2	0	2
Dow Chemical Co	2009	1	0	2	0	2	0	2
Royal DSM N.V.	2008	0	0	2	0	2	0	2
Royal DSM N.V	2009	0	0	2	0	2	0	2
Ecolab Inc	2008	0	0	0	0	2	0	2
Ecolab Inc.	2009	0	0	0	0	2	0	2
Empresa Nacional del Petroleo (ENAP) S.A, National Petroleum Company	2008	0	0	2	2	2	0	2
Empresa Nacional del Petroleo (ENAP) S.A	2009	0	0	2	2	2	0	2
Engro Chemical Pakistan Limited	2008	0	0	0	0	0	0	0
Engro Chemical Pakistan Limited	2009	0	0	0	0	0	0	0
Hanwha Chemical Corporation	2008	1	0	0	0	0	0	1
Hanwha Chemical Corporation	2009	0	0	0	0	0	0	0
Johnson Matthey Plc	2008	1	0	2	0	2	0	2
Johnson Matthey Plc	2009	1	0	2	0	2	0	2
LG Chem Ltd.	2008	0	0	0	0	0	0	0
LG Chem Ltd.	2009	0	0	0	0	0	0	0
Nitto Denko Corporation	2008	0	0	0	0	0	0	0
Nitto Denko Corporation (Nitto Denko Kabushiki-gaisha)	2009	0	0	0	0	0	0	0
Orica Limited	2008	1	0	2	0	2	0	2
Orica Limited	2009	1	0	2	0	2	0	2
Oxfam GB / Croda International Plc	2009	1	0	2	0	2	0	2
Perstorp Holding AB	2008	1	0	0	0	1	0	1
Perstorp Holding AB	2009	1	0	0	0	1	0	1
Sasol Limited	2008	1	0	2	2	2	2	2
Sasol Limited	2009	1	0	2	2	2	2	2
Solvay S.A.	2008	0	0	2	0	2	0	2
Solvay S.A.	2009	1	0	2	0	2	0	2
Wacker Chemie AG	2009	1	0	2	0	2	0	2

TABLE VI
SUMMARY PERCENTAGES OF QUALITATIVE OR QUANTITATIVE FREQUENCIES OF CODED ELEMENTS IN THE NOTES PUBLISHED IN 2008 AND 2009

Year	Modes of reporting	Accounting Policies	Income related	Cost related	Asset related	Liability related	Cash Flow related	Notes
2008: N=18	Qualitative frequency	10	0	1	0	1	0	2
	Quantitative frequency	0	0	10	4	12	1	13
	Qualitative %	55,6	0,0	5,6	0,0	5,6	0,0	11,1
	Quantitative %	*0,0*	*0,0*	*55,6*	*22,2*	*66,7*	*5,6*	*72,2*
	Sum of Qualitative % or Quantitative %	55,6	0,0	61,1	22,2	72,2	5,6	83,3
2009: N=22	Qualitative frequency	13	0	1	0	2	0	2
	Quantitative frequency	0	0	13	4	15	1	16
	Qualitative %	59,1	0,0	4,5	0,0	9,1	0,0	9,1
	Quantitative %	0,0	0,0	59,1	18,2	68,2	4,5	72,7
	Sum of Qualitative % or Quantitative %	59,1	0,0	63,6	18,2	77,3	4,5	81,8

VI. CONCLUSION

Environmental related reporting can be expected to increase as the requirements for enterprises' more extensive disclosure of the financial implications of their environmental issues increase. In this content analysis research note the aim was to explore how GRI-reporting chemical sector enterprises presented their financial performance and position in audited sections of annual reports; were the environmental issues regarded to affect to the reporter's financial outcome and position and hence conveyed into the financial results. As Foster *et al.* [7] states the independent auditor's report is a critical link in communicating financial data to users.

The note examined in sustainability aware enterprise setting the audited sections of mandatory annual financial reports. The findings from this data were that few GRI-reporting enterprises presented substantially detailed environmental details in their audited financial statements. It seemed that the importance of environmental issues were lost in the large enterprises' aggregate disclosures. These enterprises could however otherwise be reporting extensively about their environmental goals and achievements. For the accessibility of comparable and traceable information for the use of planning and voting for external shareholders and stakeholders including e.g. investors or statistics offices the more uniform presentation could be advantageous and vice versa lack of necessary information can have disastrous effects.

This empirical note examined disclosure of limited number of enterprises at a section level in the annual mandatory financial reporting concerning the environmentally sensitive but sustainable aware enterprise group in year 2009 and the previous year 2008; the years of beginning economic crash down. Further research may determine more thorough analysis of the information offered and needed between different actors with different background variables. In addition, for more comprehensive orientation the data may consist longitudinal or panel data if possible.

REFERENCES

[1] Adams C.A & Frost G. R., "Managing social and environmental performance: Do companies have adequate information?", *Australian Accounting Review* 32, 2008, 288-302.
[2] Blacconiere W.G. & Patten D.M., "Environmental disclosures, regulatory costs, and changes in firm value", *Journal of Accounting and Economics* 18, 1994, 357-377.
[3] Cetindamar D. & Husoy K., "Corporate Social Responsibility Practices and Environ-mentally Responsible Behaviour: The Case of The United Nations Global Compact", *Journal of Business Ethics*, 2007, 76:163-176.
[4] Chong H.G. & Vinten G., "Materiality Thresholds Defined by Courts: The UK Evidence", *The Journal of Asset Protection and Financial Crime* Vol. 2 Nr. 3., 2007, 234-255.
[5] Criado-Jime´nez I., Ferna´ndez-Chulia´n M., Javier Husillos-Carque´ F. & Larrinaga-Gonza´lez C., "Compliance with Mandatory Environmental Reporting in Financial Statements: The Case of Spain (2001–2003)", *Journal of Business Ethics*, 2008, 79:245–262.
[6] Elkington J., "Triple bottom-line reporting: Looking for balance", *Australian CPA*, 69, 2, 1999, 18-21.
[7] Foster B.P., McClain G, & Shastri T., "A note on perceptions of auditors' internal control report mandated by the PCAOB: Can reformatting the report enhance perceived value added?, " *Research in Accounting Regulation*, Vol. 21, Issue 1, April 2009. 63-67.
[8] Freedman M. & Stagliano A. J., "Environmental disclosure by companies involved in initial public offerings," *Auditing & Accountability Journal* Vol. 15, Iss. 1; 2002, pg. 94, 12.
[9] Gray R. & Symon, I.. "An environmental audit by any other name", *Integrated Environmental Management* 6, 1992, 9–11.
[10] Guthrie J., Cuganesan, S. & Ward L., "Industry specific social and environmental re-porting: The Australian Food and Beverage Industry", *Accounting Forum* 32, 2008, 1–15.
[11] Hamilton G. & ÓhÓgartaigh C., "The Third Policeman: 'The true and fair view', language and the habitus of accounting", *Critical Perspectives on Accounting*, Volume 20, Issue 8, November 2009, 910-920.
[12] Hodder L., Koonce, L. & McAnally M.L., "SEC market risk implications for judgment and decision making", *Accounting Horizons* 15 (1), 2001, 49–70.
[13] Konar S. & Cohen M., "Information As Regulation: The Effect of Community Right to Know Laws on Toxic Emissions", *Journal of env. economics and management* 32, 1997, 109 124.
[14] KPMG & UNEP, *Carrots and sticks for starters- Current trends and approaches in Voluntary and Mandatory Standards for Sustainability Reporting*, 2006, KPMG's Global sustainability services and United Nations Environment Programme.
[15] Linsley P.M. & Shrives P.J., "Risk reporting: A study of risk disclosures in the annual reports of UK companies", *The British Accounting Review*, Vol. 38, Issue 4, December 2006. 387-404.

[16] Llena F., Moneva J. M. & Hernandez B. "Environmental Disclosures and Compulsory Accounting Standards: The Case of Spanish Annual Reports", *Business Strategy and the Environment* 16(1), 2007, 50–63.
[17] McEnroe J.E. "Perceptions of the effects of the effect of Sarbanes-Oxley on earnings management practices", *Research in Accounting Regulation*, Volume 19, 2007, 137–157.
[18] Mobus, J. L., "Mandatory Environmental Disclosures in a Legitimacy Theory Context", *Accounting, Auditing and Accountability Journal* 18(4), 2005, 492–517.
[19] Repetto R., "Protecting investors and the environment through financial disclosure" *Utilities Policy* 2005, 13 51–68.
[20] Sinclair-Desgagné B. & Gozlan E., "A theory of environmental risk disclosure", *Journal of Environmental Economics and Management*, Volume 45, Issue 2, Supplement 1, March 2003, Pages 377-393.
[21] Stone A. & Delistraty D., "Sources of toxicity and exposure information for identifying chemicals of high concern to children", *Environmental Impact Assessment Review*, 2010, Volume 30, Issue 6, November 2010, Pages 380-387.