

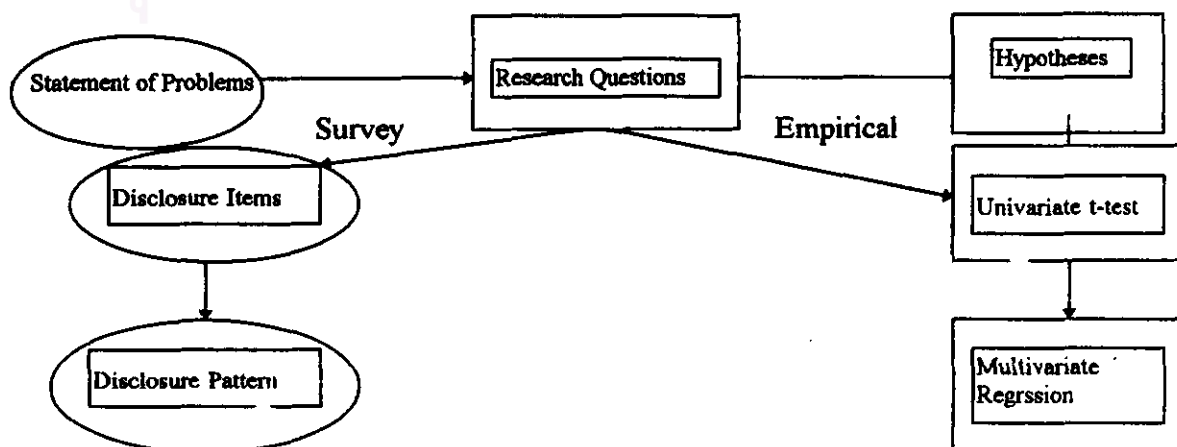
CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary

Competitive market equilibrium in the competitive model of economic theory is really quite restricted. Economists adhering to the Coasian view would argue that efficiency could be extended far beyond the competitive model. In the Coase Theorem, the problems resulting from untradable, insecure, or unassigned property rights such as the environment are known as “free-rider problem” and “tragedy of commons”. The idea explains that when many people have the right to use a single shared resource, there is an incentive for the resource to be overused and, correspondingly, when many people share the obligation to provide some resources, it will be undersupplied. A firm that chooses to pollute the environment may increase its value at others’ costs. Recently, the pressures from environmentalists and other parties are stronger. Those wrongdoers, when found guilty, are penalized and sometimes there can be huge consequences to the firm. Moreover, in an ethical sense, the deterioration of environment today will cause big problems for the next generation. Modern management has to have a more comprehensive view of stakeholders in preparing their strategic plans. Companies which respond fully and promptly to environmental issues will be in the strong competitive position in terms of their social responsibility reputation. Therefore, environmental management and reporting are the important issue for today business and it is the theme of this study. Figure 6-1 illustrates the procedures of this study.

Figure 6-1: Flowchart of the Study’s Procedures



This study used a questionnaire to survey the opinions from the provider group, listed companies in the Stock Exchange of Thailand, and the user group which included institutional investors, government authorities, creditors, communities, and intermediaries. The results concluded that environmental information: environmental policies, plans, projects, assets/expenses, law conformity, benefits, and contingent liabilities should be disclosed with reference to their magnitude information, giving no environmental report was presented. Assets/expenses was the element receiving the highest average score in disclosing with reference to their magnitude and environmental plans received the lowest average score in disclosing by explain. Considering the average score for each element of disclosure, the scores were between one and two which meant disclosure should be in explanation or refer to their magnitude. In the provider group, assets/expenses received the highest average score and environmental projects received the lowest average score. Electrical product and computer had the highest average score while food and beverage had the lowest average score. In the user group, law conformity received the highest average score and environmental plans received the lowest average score.

A proposed environmental report which includes the auditor's report, the balance sheet, the profit and loss statements and the notes to statements was presented and opinions about the report were provided by the respondents. This proposed report was prepared based on the concepts of financial statement preparation. The transactions were recorded using double-entry notion. The format applied the presentation of the financial statements. The concepts of relevance, reliability, and understandability were emphasized. The results show that the environmental report was supported overall. Law conformity in the notes to statements received the highest average support and revenue in profit and loss statements received the lowest average support. In the provider group, law conformity in the notes to statements received the highest average score of support while revenue in the profit and loss statement received the lowest average score of support. In the user group, law conformity in the notes to environmental statements also received the highest average score of support

and revenue in the profit and loss statement also received the lowest average score of support.

There were some comments from both provider and user groups (less than 50 percent of all respondents). The comments were separated into supportive and unsupportive schemes. The supportive reasons from both groups included: to encourage the business responsibility; to have clear presentation and to create a mean to evaluate the performance; and to have standard for disclosure. The provider group provided an additional supportive reason of having benefit to trade. The user group provided an additional supportive reason of promoting the business image. On the other hand, the unsupportive reasons from both groups included: unnecessary to separate from financial statements; problems in measurement; and create more burdens and costs to the companies. The provider group provided additional unsupportive reasons of being irrelevant to tax and too detailed. The user group provided additional disagreed reason of more details are needed in the area of liabilities in balance sheet and revenue and expenses in profit and loss statement.

There were also a number of suggestions from both provider and user groups (less than 20 percent of all respondents). The suggestions included: the problem of measurement must be resolved; more detailed contents are required; and the format needs to be varied according to industry type. The provider group provided additional suggestions that the disclosure of whole project should be included, and standards should be established. The user group provided additional suggestions that more details about scope, procedures, and date in auditor's report should be included, the requirement of ISO 14000 should be applied to the disclosed information, the problem of allocation between environmental related and nonenvironmental related activities should be resolved, and tax incentive should be implemented. Table 6-1 summarizes the results including comments and suggestions.

Table 6-1: Results of the Opinions about Disclosure Pattern giving a Proposed Report

Statements	Agreement	Disagreement	Suggestions
<p><i>Auditor's Report</i></p> <p>The overall average score of this item was 0.54. The provider group had a slightly lower score of acceptance than the user group.</p> <ul style="list-style-type: none"> - Vehicle and part, electronic component, energy, and jewelry and ornament had the highest score. Health care services and electrical products and computers showed disagreement. - Institutional investor had the highest score. Intermediary had the lowest score. 	<p>Main reasons were</p> <ul style="list-style-type: none"> - to encourage the responsibility of business to environment - to learn that the companies have actually performed as they claimed - the disclosed information is more realistic - the environmental management can be improved. - the format was clear and understandable. - Other reasons included the international trade concerns and the insufficiency of government agency manpower. <p>Additions from users:</p> <ul style="list-style-type: none"> - to support the idea of independent opinion on the statements. - Other reasons included: to learn the company's compliance with regulations, to use as reference for further studies, to have quantified report, to have reliable report, and to follow-up the company's performance. 	<p>Main reasons were</p> <ul style="list-style-type: none"> - too much detail and too difficult to prepare that may cause more business' burden - no standard and resulting to difficulty in audit. - unnecessary to separate from the financial statements - users of financial statements are not interested in environmental information. - Other opinions were included to lessen the importance of financial statements or to mislead the users of financial statements; environmental issue should be internal audit; and concern of qualification of auditor. 	<p>Format:</p> <ul style="list-style-type: none"> -to report and audit only the items that can be measurable at the beginning stage. -format was to compare with the format from other independent investigators. <p>Content:</p> <ul style="list-style-type: none"> -the report should explain more details such as audit period and complete date, and included the ISO 14000 audit in the report. -should include the procedures used and the related laws or regulations. <p>Practical purpose:</p> <ul style="list-style-type: none"> -standards should be set up to ease the audit; this audit should be voluntary and the fee should not be the companies' burden; the auditors must be unbiased and capable; and the auditor should come from government agencies. -standards should be issued gradually. -auditor's responsibility should be clearly known.

<p><i>Balance Sheet - Assets</i></p> <p>The overall average score was in the same level of previous item. The provider group had slightly lower score of acceptance than the user group.</p> <ul style="list-style-type: none"> - Jewelry and ornaments had the highest support. Food and beverage had the lowest score. - Community had the highest score. Government agency had the lowest score. 	<p>Main reasons were:</p> <ul style="list-style-type: none"> - clear presentation on the environmental investment and liabilities. - to encourage environmental concern. - provide measurable information. - Other concerns were: benefit to trade, and providing standards. <p>Additions from users:</p> <ul style="list-style-type: none"> - apply the same format of financial statements. - separated environmental liability. - easy to audit. 	<p>Main concern were:</p> <ul style="list-style-type: none"> - issues are too complicated - it would be too difficult to collect data - create confusion in separating from financial statements. - Other concerns included: financial statement users may not be interested; environmental responsibility should be measured by qualitative information; information is insufficient; and should not be presented in the format like financial statements; and create bad image for liabilities. <p>Additions from users:</p> <ul style="list-style-type: none"> - difficult to separate the assets. - unnecessary to have fixed format. 	<p>Format:</p> <ul style="list-style-type: none"> - this information should be generally presented in financial statements with separated section or disclosed separately only when the information is material, or presented as comparison to the plan. -include the requirement from ISO14000. -accounts should be classified into more details to include low-pollution machines <p>Contents:</p> <ul style="list-style-type: none"> - more details about assets related to environment were needed, different information were required according to industrial types; contingent liabilities should not be recognized because of their uncertainty; and some items had no clear and reliable evidence. - The capital should be included in the balance sheet as same as financial statements.
<p><i>Balance Sheet - Liabilities</i></p> <p>The overall average score was decreased to 0.44. The provider group had lower score than the user group.</p> <ul style="list-style-type: none"> - Jewelry and ornaments highly supported. Food and beverage disagreed. - Community had the highest score. Government had the lowest score. 			<p>Practical purpose:</p> <ul style="list-style-type: none"> - problems in measurement; identify industries which are subject to disclosure; and provide incentive for disclosure. -provide tax incentive for good performance. -solve problem of allocation between projects related to environment and those not relevant to environment.

<p>Profit and Loss - Revenue</p> <p>-the lowest average score among all elements. The provider group nearly provided neither accepted nor rejected this item while the user group had higher score.</p> <p>- Jewelry and ornament had the highest score. Seven industries provided the disagreement.</p> <p>- Community had the highest score. Creditor had the lowest score.</p> <p>Profit and Loss - Expenses</p> <p>The overall average score of this item was 0.05. The provider group had almost half lower score than the user group.</p> <p>- Jewelry and ornament had the highest score. Food and beverage disagreed.</p> <p>- Community had the highest score and creditor had the lowest score.</p>	<p>Main support was:</p> <ul style="list-style-type: none"> - clear presentation of the results of investment. - Other reasons were to encourage environmental responsibility, to create standard for measurement, to be useful for budgeting, to generate revenue in financial statements, and to have benefit for trading, <p>Additions from users:</p> <ul style="list-style-type: none"> - be initiative approach to present environmental information. - to apply conservative concept. 	<p>Main issues were:</p> <ul style="list-style-type: none"> - its difficulty in measurement - putting more burden on business - Others was: unnecessary to separate from the financial statements, it cannot gain attention from users, and financial statement and environmental performance should not be measured in quantity. Lack of detail, lack of standard, no tax effect, creating negative results from the early stage, and should be internal matter. 	<p>Format:</p> <ul style="list-style-type: none"> -separate only certain accounts from income statements for disclosure purpose. - be varied according to industries <p>Contents:</p> <ul style="list-style-type: none"> - problems in measurement have to be resolved, more details are necessary, and reliability of data at the report date is necessary. -revenue should include the reduction of expenses resulting from the improvement of environmental performance. <p>Practical purpose:</p> <ul style="list-style-type: none"> -manage the problem of allocation. should initially. -emphasize disclosures in explanations. -cost should include the effect to the neighbor or society. -provide provision for cost.
<p>Notes to Statements</p> <ul style="list-style-type: none"> - Accounting Policies; Environmental Policies; 	<p>Main reasons were:</p> <ul style="list-style-type: none"> - provide clear presentation, - good for starting, - informing the 	<p>Main reasons were:</p> <ul style="list-style-type: none"> - too detailed, - difficult to collect data. - create bad image 	<p>Format:</p> <ul style="list-style-type: none"> -policy and plan should be in the front page of the statements or notes.

<p><i>Environmental Plans;</i> <i>Environmental Projects;</i> <i>Law Conformity;</i> <i>Contingent Liabilities</i></p> <p>The overall average scores were higher than the previous one. Law conformity received the highest overall average score. The provider group had higher score than the user group in environmental policies only.</p> <ul style="list-style-type: none"> - Jewelry and ornament had the highest score. Pulp and paper and food and beverage, in general, had low score. - Government agency had the highest score in general. Intermediary had the lowest score. 	<p>readers to the responsibility of the firms,</p> <ul style="list-style-type: none"> - Other views were: it could encourage environmental responsibility, be useful for financial planning, be of benefit for trading, comparable, clear measurement, promote company's image, being useful for performance evaluation, capable to do, alert to liability that may be increased, comply with generally accepted accounting principle, and to provide information for budgeting. <p>Additions from users:</p> <ul style="list-style-type: none"> - to prove the company's policy. - to see the collaborative between government and firms. - be aware the company of liability 	<p>to the firms.</p> <ul style="list-style-type: none"> - Other reasons included: unnecessary to separate from financial statements, inattention from users, unrelated to accounting issues, disagreement with the format, no clear standard and measurement, emphasize more toward profit and loss, present only positive information, and creating confusion to the user. <p>Addition from users:</p> <ul style="list-style-type: none"> - be unfair to the disclosed firm if all firms did not disclose this information uniformly. 	<p>Contents:</p> <ul style="list-style-type: none"> -details on environmental projects should be expanded to include the whole project from the start to present, problems of measurement could make quantified report unacceptable. <p>Practical purpose:</p> <ul style="list-style-type: none"> -setting up standards for reporting and using the report as a mean to reduce liabilities. -negative information should be disclosed compulsorily.
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Taking the survey results together with comments and suggestions (although the number of comments and suggestions were less than 50 percent of all respondents), the original proposed environmental report was modified. There was no major modification because the proposed report received the average score of acceptance in all components. The adjusted report adds the following points: audit period and more auditor's opinion in the auditor's report; environmental equity in the balance sheet; and accumulated revenue in excess of costs in the profit and loss statement. Figure 6-2 presented a full set of the proposed environmental report.



Figure 6-2: Proposed Environmental Report

An Environmental Independent Auditor's Report *1

Presented to.....

We have examined the balance sheet as at and the profit and loss statement relating to the environmental issue for the years then ended of (the company)..... in according to the policy (regulation or standard) of^{*2}.....

In our opinion, (the company).....has the financial position as at..... and the results of its operations relating to the environmental issue for the years then ended in compliance with the policy (regulation or standard) of^{*3}.....

Signature.....

Date.....

___ underlines are changes that had been made from earlier proposal

*1 Questions about qualification of auditor

*2 Questions about the scope of works and standards for audit

*3 Questions about the accounting standards.

.....Company Limited
Environmental Balance Sheet

	As at December 31,	
Environmental Assets**	19X2	19X1
*Waste-treatment Machine during Installation	XXXX	XXXX
*Research for Managing Natural Resource Usage	<u>XXXX</u>	<u>XXXX</u>
Total Environmental Assets	<u>XXXX</u>	<u>XXXX</u>
Environmental Liabilities and Equity		
Environmental Liabilities		
*Liabilities from Improvement of Air-filter System	XXXX	XXXX
*Liabilities from Estimated Ground Development** after Completing the Project	<u>XXXX</u>	<u>XXXX</u>
Total Environmental Liabilities	<u>XXXX</u>	<u>XXXX</u>
Environmental Equity		
<u>Environmental Fund</u>	<u>XXXX</u>	<u>XXXX</u>
<u>Cumulative Revenue Higher (Lower) than Costs</u>	<u>XXXX</u>	<u>XXXX</u>
<u>Total Environmental Equity</u>	<u>XXXX</u>	<u>XXXX</u>
<u>Total Environmental Liabilities and Equity</u>	<u>XXXX</u>	<u>XXXX</u>

___ underlines are changes that had been made from earlier proposal

*4 More details of assets should be included

*5 This item could have problems in measurement

.....Company Limited
Environmental Profit and Loss Statement

	For the years ended Dec. 31,	
	19X2	19X1
Revenue from Environmental Project^{*6}		
Revenue Increase	XXXX	XXXX
Medical Expense Decrease	<u>XXXX</u>	<u>XXXX</u>
Total	<u>XXXX</u>	<u>XXXX</u>
Expenses for Environment		
Amortization of the Investment in Air-filter Machine	XXXX	XXXX
Natural Gas Expenses	XXXX	XXXX
Electricity Expenses	XXXX	XXXX
Waste-water-treatment Expenses		XXXX
Costs of Waste ^{*7}		
- Dust	XXXX	XXXX
- Mud	<u>XXXX</u>	<u>XXXX</u>
Total	<u>XXXX</u>	<u>XXXX</u>
Revenue Higher (Lower) than Costs	<u>XXXX</u>	<u>XXXX</u>
<u>Revenue Higher (Lower) than Costs at the Beginning of Periods</u>	<u>XXXX</u>	<u>XXXX</u>
<u>Revenue Higher (Lower) than Costs at the End of Periods</u>	<u>XXXX</u>	<u>XXXX</u>

Remark

- These items may be presented in the Notes to Financial Statements as a separate items.

___ underlines are changes that had been made from earlier proposed

*6 Revenues could have problems in measurement

*7 Costs of waste could have problems in measurement

.....**Company Limited**

Notes to Environmental Statements

As at December 31, 19X2 and 19X1

1. Summary of Significant Accounting Policies

1.1 Revenue increase calculated from revenue before implementing the improved production process compared to that after implementing.

1.2 Medical expense decrease calculated from medical expense before implementing the improved production process compared to that after implementing.

1.3 The company amortized liability from ground development after completing the project using straight-line basis in 10 years according to the estimated life of the project.

1.4 The company recognized the expenses involved in improving environment in compliance with the regulation as expenses during the year and recognized the voluntary costs associated with environment in the future as assets and amortize using straight-line method in 10 years.

2. The Policy Involving the Environment

The company has the policies involving the environment as follows:

2.1 The management will comply strictly with the regulation relating to the environment.

2.2 The company will eliminate the waste to be as less as possible.

2.3 The company will consume less natural resources by recycling or substituting with other materials.

2.4 The management will implement environmental audit system.

3. Plans for the Environment

3.1 The company will invest in improving the waste-treatment machine at the amount of Baht 30 million in 1997.

3.2 The company will invest in the research project in consuming less natural resources at the amount of Baht 20 million for the next 5 years beginning in 1996.

4. The Projects and the Successful Results Involving Environment

4.1 The company established the special management task force responsible for environmental issues. The team will have responsibility to take care all activities relating to the environment exclusively.

4.2 The company was donated to preserve the forest at the amount of Baht 10 million.

4.3 The company received the award in the category of supporting environmental projects.

4.4 The company can reduce the air pollution during the year as follows:

NO ₂	from	120 Mg/m ³	to	100 Mg/m ³
SO ₂	from	370 Mg/m ³	to	365 Mg/m ³
CO	from	11.5 Mg/m ³	to	10 Mg/m ³

5. Compliance with the Regulation Involving to the Environment

The company complies with all regulation involving the environment during the year as follows:

5.1 The company installed the waste-water-treatment machine at the amount of Baht 10 million as required by the regulation.

5.2 The company installed the dust capture as required by the regulation.

5.3 The company has controlled the level of pollution as follows:

	Pollution	Required by law	Generated by company
Air Pollution	SO ₂ (24 Hours)	80 Mg/m ³	70 Mg/m ³
		40 Mg/m ³	33 Mg/m ³
Water Pollution	BOD	850 g/m ³	840 g/m ³
	COD	1,500 g/m ³	1,450 g/m ³

6. Contingent Liabilities

The company was investigated in draining waste water into the river. The result of this investigation has not revealed at this moment. The company would have to pay for the penalty in the amount of Baht 10 million if the company is found guilty.

It is apparent that the majority of respondents agreed that current environmental damage were caused partly by businesses. The user group provided higher scores of agreement than the provider group. The results could confirm that the environmental report is necessary in order to enhance environmental responsibility and to measure firms' real performance. Also, the majority of respondents agreed that environmental information should be disclosed compulsorily rather than voluntarily. The user group showed a higher degree of support. This result is contradictory to the survey conducted in New Zealand (Davey et al., 1995) which concluded that New Zealand's accountants preferred voluntary disclosure of environmental information to compulsory disclosure.

It is empirically shown that disclosure of positive environmental information by companies has no statistically significant difference when compared to disclosure of negative environmental information. However, the mean score of disclosure of positive information was higher than disclosure of negative information. The result requires further study as to why firms tend to disclose negative environmental information as well as positive environmental information.

For the test of association between disclosure and firms' characteristic, which included environmental performance, economic performance, and stakeholder's influence together with size and risk, all variables were determined and collected. Using univariate analysis, there was statistical significance in the association between disclosure and shareholder's influence, one aspect of stakeholder's influence. However, the relationship was opposite to the hypothesis. The result meant that the closely held companies tend to disclose environmental information more than the companies their shares were wider spread. This could lead to another scenario that the closely held companies may want to publicize their environmental activities to avoid the public pressures rather than keep silence. Using multivariate analysis, the study showed that there was weak association between voluntary disclosure and its proposed determinants: environmental performance, economic performance and stakeholder's influence. Either weighted or unweighted disclosure received low R-square. When

considering the independent variables, shareholder's influence had shown statistical significance in the model. There was a slight improvement in the R-Square when disclosure was separated into seven categories: policies, plans, projects, law conformity, assets/ expenses, benefits, and contingent liabilities. The model using contingent liabilities received the best fit among the above seven categories. The R-Square results were in the satisfactory level when the study separated industries into five groups based upon their environmental impacts. However, the coefficient of variation was still high and the predicted sign of the independent variables were inconsistent. Finally, the real disclosure were obtained and tested. The result was better than the unweighted and weighted disclosure stated earlier although R-Square was not higher than 0.2.

In summary, the industry group could have affect on the disclosures of environmental information. The power to explain the model was weak although the study was well controlled. The results of the study also concluded that shareholder's influence was a prominent factor that had a statistically significant association with disclosure but the sign was different than expected. The reasons for weak results could come from: 1) many political issues remain conflicting. The laws are still not fully implemented as compared to those of developed countries; 2) creditors do not consider environmental issues as serious problems compared to economic issues; 3) management has been reluctant to report its earning fluctuation; and 4) there was indifference in environmental performance among firms. They therefore may not see that disclosure of environmental information would be of benefit.

6.2 Conclusions

The following discussion is prepared to answer the research questions raised in chapter 1.

- What should be disclosed?

The main objective of this study was to create a model to disclose environmental information. From the result of this study, giving no formal report is presented, environmental information including policies, plans, projects, law conformity, assets/expenses, and contingent liabilities should be at least disclosed in explanation with reference to their magnitude. Information in either a positive or negative point of view should be disclosed. Environmental assets/expenses should be considered as the first priority. It appears that environmental disclosures in the area of assets/expenses, law conformity, environmental policies, plans, and projects are higher supported while contingent liabilities and benefits are less supported.

-What form should the reports take?

The pattern to disclose environmental information apart from financial statements was supported by both the provider group and the user group in this study. The proposed report applied the concepts and model of financial statements to make it easy to understand. All items in the report are able to be reconciled with the figures in the financial statements for the purpose of relevance and reliability. If the firms reclassify environmental information apart from other operating information, the preparation of the environmental report would be feasible. Funds for environmental investments should be budgeted to record the environmental equity in the balance sheet. However, some problems must be resolved before being fully implemented. Those problems included: the measurement of contingent liabilities and revenue, the qualification of the auditor, and the scope (including procedures) of the audit. In conclusion, the environmental report (Figure 6-2) is suggested for further development into a standard and practice. The report could be easily developed by the listed companies because the format is similar to the financial statements. Users can understand the report because it presents the information with reference to the financial data or its magnitude. Unless the proposed report is implemented, the disclosure of environmental information based on the first question should be taken by the businesses as their immediate disclosure activity.

- Should it be done by accountants?

Business and society admitted that the environmental damage was partly caused by business itself. Therefore, actions should be taken to minimize the problem. This study suggests that disclosure of the information would be one solution. Environmental disclosure is fairly new to Thailand. It is evident that persons who answered the questionnaire admitted that their knowledge of this issue was fair to low. The real disclosures in the annual reports were also in limited form and in limited extent. Accountants could help society and play an important role in developing measurement and reporting of environmental information.

- Should it be audited?

In order to have a report that conveys useful information to users, the report must be subject to the concept of reliability and comparability. Therefore, this environmental report needs to be audited. The auditor must be capable to audit and report the position and the result of the firms' operation with regards to their environmental performance. The presence of the standard or guideline could assist the companies to achieve the effectiveness of reporting.

- Who pays?

There are arguments to the questions: 1) environmental report could create more burden to businesses; and 2) it is worthwhile to disclose. This study shows that an environmental report is necessary as a tool to encourage environmental responsibilities. To report this information, the companies must have additional costs including audit costs. Therefore, the government and authorities should consider certain support in order to make this report possible to the companies. Those supports could include: provide incentive for reporting the environmental information; provide subsidy for additional costs; and prepare guidelines or standards for reporting.

- Should it be compulsory or voluntary?

This study demonstrates that there were certain responses from the businesses and the users of financial statements to the environmental issues. However, the current disclosures of the environmental information are very low and unequal. Respondents of this study agreed that the environmental information should be compulsory. And finally, based on past experience of the author, Thai companies are willing to do if disclosure is required by law. Therefore, the basic disclosures, especially negative information, should be compulsory.

6.3 Recommendations

This study has many benefits. The purposes of this study are to provide evidence of understanding of environmental management and reporting by Thai companies and also provide guidelines and a model to establish an environmental report. The suggested report could be the milestone for developing a standard for environmental reporting. The implementation should be step by step. At the beginning stage, disclosures of environmental information could be in the notes to financial statements with reference to their magnitude. Later, the disclosure should be developed to the full report. Upon that stage, problems of measurement, details of information, and standard format should be resolved.

In this study, the hypotheses were tested to confirm the relationship between environmental disclosure and factors related to disclosure: a firm's environmental performance, financial performance, stakeholders' influence, and specific firm characteristics. As a result of understanding the disclosure model, the management of a firm can set its policy for disclosing the information. In addition, policy makers such as the Stock Exchange of Thailand, and the Institute of Certified Accountants and Auditors of Thailand can have some basic principles for issuing future regulations and standards.

It was observed that accountants had insufficient knowledge about accounting for the environment. Accountants should help society and play an important roles in developing measurement and reporting of environmental information. Therefore, education, standards, and publicity are needed to encourage accountants to learn and develop this issue.

Management, in addition to complying with laws and regulations, has to strictly recognize their duty and ethics. Environmental issues are part of a long-term strategy. Modern management should realize that companies may enjoy short-term profits but suffer huge losses in the future if they do not take the environmental agenda into their consideration.

The success of environmental management and reporting needs the coordination from many departments within the company. Management should establish the whole system of policies, plans, and procedures to concern good environmental management and data availability for reporting.

In order to effectively enforce the environmental remedy, the government authorities have to work in a coordinated manner. The laws should be amended to directly punish the wrongdoers. The related authorities have to consult to find effective approaches to inspect and encourage enterprises to have more responsibility on environmental remedy.

If standards are prepared, disclosure of environmental information should be quantifiable. However, in the area where measurement problems remain unresolved, the explanation with reference to its magnitude should be required. Also, the standards or requirements separated by industry group may have to be considered by the authorities.

The report must be subject to the concept of reliability, comparability, and understandability. Therefore, this environmental reports needs to be audited. The

auditor must be capable to audit and report the position and the result of the firms' operation with regards to their environmental performance.

The companies must have additional costs in reporting and auditing. Therefore, the government and authorities should consider certain supports in order to make this report possible. Those supports could include: provide incentive for reporting the environmental information; provide subsidy for additional costs; and prepare guidelines or standards for reporting.

Firms that deal with international trade should be alert and plan for environmental management and disclosure. The pressures from overseas clients in environmental issues as indicated in ISO14000 are becoming more important. Exporting firms need to follow the trend and prepare well for their own benefit.

Finally, annual report users will benefit from the disclosure of environmental information which will be useful for decision making. This study can encourage business and society to take 'green performance' and 'green accounting' as serious issues. It also encourages accountants and standard-setting bodies to coordinate their efforts to push Thai accounting standards to an international level. The disclosure model could be the foundation for macro accounting, the accounting concept that views society as the primary user of financial accounting reports.

6.4 Limitations

The limitation of this study arises from using the level of environmental disclosure intention obtained from firm's accountants and top management as surrogates to voluntary disclosure of the firms. As mentioned earlier, current disclosure of environmental information in Thailand and other developing countries is insufficient. To conduct the research in new areas such as this issue seems to be impossible if data availability is the crucial concern. However, the issue becomes much more important in those countries. This study aims to initiate the concern of

environmental issues to accounting in those countries. Therefore, the methodology used in this study was not as rigorous as was desired.

Another issue is the distribution of the variables used in the model which were not normally distributed. Environmental management is at the early stage. The Thailand Stock Market is new, illiquid, and dominated by a small number of companies. This could raise questions as to the quality of the reported financial data.

This study used a questionnaire to collect the data. This could result in too few respondents providing additional comments or suggestions and some answers may be questionable in their reliability. Other methodologies that provide more control may have been able to use have been used in this study. However, giving more weight on variety of the respondents, a questionnaire approach provides more feasible access to the various groups of respondents under the limited time frame. Also, because the issue is new to the respondents, it may obtain unreliable result even using other methodologies such as behavioral experiment.

In the presentation of the survey results, some industries contained only one respondent. This may lead to the question whether that respondent could be representative. Because few firms are in those particular industries and the intention to present the results separated by industry group, those respondents were not included in other industry groups. However, the responses were checked to ensure that they fairly represented their particular industry.

6.5 Suggestion for Future Research

This study was conducted during the beginning stages of environmental disclosure in Thailand. The study of voluntary disclosures by the firms when disclosure of environmental information is in greater extent to confirm the result of this paper can be conducted in further research. The study will warrant that the development of environmental disclosures in Thailand moves toward the developed countries' trend or take on its own identity.

This study provides guidelines and report prototype in general. Further investigation of disclosure separated by industry group could be another interesting area.

An auditor's role and development to cope with the change toward environmental concerns is another issue for further investigation. The results of this study suggests that auditor's report should be included in the environmental report. Further study directed to the auditor group should be pursued to identify their audit's objectives, procedures, and report to the greater extent.

The study of the relationship between environmental disclosure and its information content to the stock market is another interesting area. Many studies have been conducted in the area of information content. Earning is one element that has proved to have information content. It determined the volatility of the stock price in some extent. Environmental information such as contingent liabilities was found to have incremental value. (Barth and Mc Nichols, 1994; Holthausen, 1994; and Blacconiere and Northcut, 1997). Therefore, a study of this type would investigate the result in an emerging capital market.

The study why firms voluntarily disclose environmental information should be another area of interest. This study concluded weak association between disclosure and economic performance, environmental performance and limited association between disclosure and stakeholder's influence. The search for other factors that might have influence to firms' voluntary disclosure should be pursued.

The study of non-listed companies could be conducted to extend the results of this study to companies nationwide. Those foreign subsidiaries, for example, could have more responsibility in environmental management. The pressures from parent companies could have an impact on their management and disclosure strategies. Also, those non-listed companies could be the major sources of pollution generation.

Therefore, it is desirable to see the development of this issue in those companies' performance.

It should enhance our understanding of emerging capital markets in general, if this study could expand to include countries other than Thailand. The study may include a comparison between practices in emerging capital markets and those in developed markets.

A study of which media firms should prepare in order to gain the most effectiveness in disclosing environmental information could be another issue. The current media to convey the message to stakeholder is the annual report. Other media such as quarterly reports, newspaper, SET Newsletter, or company's brochure may be other effective alternatives. It would be useful to see how effective each media strategy would be.