ISO 14001 in Uruguay

- problems and opportunities

Master Thesis, 20 p, Business Administration
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PREFACE

This report is my final thesis on the Master Programme in Business Administration, given at SLU (Swedish Univesrity of Agricultural Science)

The report is the result of a Minor Field Study (MFS) in Uruguay, conducted with the financial help of Sida (www.sida.se).

It has been very interesting to work with this report and the interviews conducted in Uruguay became an important base for my study, providing important facts contributing to a fruitful discussion.

It would be interesting to follow up what is happening in the field of environmental management in Uruguay in the future, especially since the country is the first one in the world to have an Environmental Management system (EMS) on a national level. I strongly believe that this fact eventually will encourage more companies to implement an environmental management system.

Acknowledgements

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Then I would like to thank all of the respondents in my case studies: Javier Gonzalez and Josélem Pozzoti at Ecasol, Carina Oddone at Pinturas industrials, Fernando Manfredi at Portones Shopping, Fernando Cabezas at Teyma, Pablo Benia at UNIT, Aramis Laitichian at the environmental ministry and Raul Prando at COTEC. All of you have shown a great interest and taken a lot your time to explain and tell me about the environmental management in Uruguay. I am also very grateful for the further contacts and advice you have given me.

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ABSTRACT

This study is about the opportunities and problems of the implementation of the environmental management system ISO 14001 in Uruguayan companies. The driving forces and the process of implementation are studied.

Since few case studies of the implementation of ISO 14001 in developing countries have been conducted, this report will provide additional knowledge in the field of environmental management in companies of developing countries.

In the four case studies in this report, the most common driving force for implementing ISO 14001 is the requirements from international customers. Other important motives are the demands of the corporation, commercial benefits and general environmental concern.

The most important problem all companies have faced with the implementation is the lack of resources. The deficient regulation of the country and the low commercial benefits in the internal market are other problems. The most important benefits perceived by the companies are the maintenance of international customers, cost reductions through less energy use and garbage recycling and the long-term gains from the "green image" of the company.

keywords: environmental management systems, ISO 14001, developing countries, sustainable development

RESÚMEN

Este estudio se trata sobre las oportunidades y problemas de la implementación del sistema de gestión ambiental ISO 14001 en compañías uruguayas. Las fuerzas pujantes y el proceso de implementación son estudiadas.

Al ser pocos los casos de estudio conducidos sobre la implementación de ISO 14001 en países en vías de desarrollo, este informe brindará información adicional en el campo de gestión ambiental en compañías de estos países.

En tres de los cuatro casos de estudio del presente informe, el denominador común para la implementación de ISO 14001, es el requisito de clientes internacionales. Otros motivos importantes son la demanda de la corporación, beneficios comerciales y preocupación por el medio ambiente.

El problema más importante que todas las compañías han enfrentado con la implementación es la falta de recursos. La regulación deficiente del país y los pocos beneficios comerciales en el mercado interno son otros problemas. Los beneficios más importantes percibidos por las compañías son el mantenimiento de los clientes internacionales, reducción de costos a través de menos energía utilizada y las ganancias a largo plazo de la "imagen verde" de la compañía.

***Términos claves*: Sistemas de gestión ambiental, ISO 14001, paises en vías de desarrollo, desarollo sostenible**

CONTENTS:

1. INTRODUCTION

1.1 Background

Environmental issues are crucial in a development perspective. Sustainable development refers to the interface between the environment and society. It focuses on social, economic and environmental development (Dobers, 1997).

During the conference in Rio de Janeiro in 1992 (United Nations Conference on Environment and Development) the Commercial Council for Sustainable Development emphasized that commerce and industry need tools that allow them to measure their environmental performance and to develop techniques of environmental management (www, UNIT, 2003). For ISO (International Organization of Standardization), it was specifically solicited that they increased their activities in the environmental field. With this background they developed the environmental management system ISO 14001, which is designed to structure and communicate the environmental work of all kinds of organizations. ISO 14000 is the whole family of documents related to environmental management, containing for example guidance on implementing ISO 14001. ISO 14001 is the most common Environmental management system (EMS) used internationally and it is a voluntary system that requires the firm to identify, measure and control its environmental impact (ibid.). The purpose of this system is the continuous improvement of the environmental management of the company.

In 1998 the Uruguayan environmental organization Fundación Ecos, together with the Uruguayan environmental ministry organized a seminar on international trade, the environment and sustainable development in Mercosur (ICTD, 1998). The meeting, held in Montevideo, the capital of Uruguay, focused on the role of commerce and industry and their environmental impact. A panel dealing with the integration of environmental externalities in production processes noted that “the polluter pays” principle was still little applied in Mercosur countries, i.e., Uruguay, Paraguay, Brazil and Argentina (Walsh, 2001). The panel recommended that Mercosur members make wider use of the ISO 14000 standards of environmental management.

Mercosur is an area in Latin America with a fairly good number of environmentally certified companies, compared with the rest of Latin America. However, the number is still small compared with industrialized countries. Uruguay and Paraguay are the countries in the Mercosur region with the fewest ISO 14001 certified companies. There are currently 29 companies in Uruguay that are certified with ISO 14001 (pers. comm., Benía, 2003). The companies are, for example, chemical and tool industries and construction companies. There are also one hotel and one shopping mall included in the list. Most of these companies trade with companies in industrialized countries.

There are several reasons why organizations choose to adopt an environmental management system (EMS). Among the most common reasons are: customer requirements, competitive advantages and systematization of the environmental work (Almgren et al.,1996). For developing countries, a reason for implementing an EMS could also be a reduction of non-tariff trade barriers existing in trade with industrialised countries (Rong et al., 2001).

Companies certified with an EMS have noticed an improved structure in the environmental work. They have also noticed that this system meets the needs of important customers. The

negative aspects they have discovered are, among others, that the system is expensive to implement and that it requires a lot of time on documentation and paper work (Morrow and Rondinelli, 2002). A problem for companies in developing countries is that they often do not have the financial and technical resources to implement an EMS (Rong et al., 2001). At the same time, in a developing country with a lot of foreign trade, as the case of Uruguay, implementing an EMS could become a requirement in order to stay in the market place.

1.2 Uruguay and the environment

Uruguay might not be a typical developing country and it might therefore not be representative for all developing countries. The living standard is traditionally higher than in many other developing countries, and it has historically been a relatively rich country in the region. Since it is a very small country with basically agricultural production (meat and dairy production being one of the major incomes) the environmental problems caused by the commerce and industry are relatively insignificant compared with many industrialized countries.

However, there are some serious environmental problems caused by industrial effluents and household garbage. The garbage problem in Montevideo is partly helped out by recipients for PET bottles and by some poor people earning their living by collecting and reselling the heavy rubbish (pers. comm., Gianoni, 2003).

Uruguay has relatively many environmentally certified industries compared with many other developing countries. However, recently the poverty is increasing immensely in Uruguay due to an economic crisis in the region (ibid.). Now Uruguay faces a very difficult economic situation, with a drastic increase in the inflation of the currency. The inversions in the environmental management situation have followed the economic situation in the country and a lot of the planned environmental work has been canceled in public and private organizations.

1.3 Problem formulation and objectives

According to Morrow & Rondinelli (2002), there are few studies of company implementation of environmental management systems (EMS). The few that exist mainly deal with companies in industrialized countries.

With this background, the overall objective for this thesis is to describe the motives and the perceived pros and cons in implementing an EMS (in this case ISO 14001) in Uruguayan companies. The results will be compared with studies conducted of companies in both developed and developing countries, in order to see whether their motives, problems and benefits are similar or different from those in the literature. The case studies are built on retrospective interviews where the focus of the dialogue was directed towards these three questions:

- Which are the driving forces for the companies to implement an Environmental Management System?

- What are the perceived needs for resources in implementing an Environmental Management System?

- What has been the result of the companies' work with ISO 14001?

1.4 Approach

I have based the case studies on the empirical findings, mainly from interviews with four companies in Uruguay, all certified with ISO 14001. As part of a qualitative approach this method provided grounds for non-measurable results, for example the respondent's opinion of the system (Halvorsen, 1992). The questions I asked allowed the respondents to give their personal view of the situation.

The results of the empirical findings are analyzed and compared with appropriate empirical and theoretical studies.

1.5 Delimitations

The empirical material provided in a few case studies may not be empirically generalized without a thorough theoretical understanding. It may, however, provide a starting point for building grounds for a theoretical generalization and continued studies in the area.

There are various EMS; each of them has advantages and disadvantages. I have chosen to study the implementation of ISO 14001, since it is the most well-known one and the most probable requirement in trade (Rong et al., 2001).

1.6 Definition of terms

Environmental aspect: The ISO 14001 standard's term environmental aspect is used in this study (ISO 14001:1996, p.8). According to the standard, the term environmental aspect means a part of an organization's activities, products or services that may affect the environment. One example of an environmental aspect is transports, which has an environmental impact.

Environmental impact: Environmental impact is referred to as the company's contribution to the environmental problems (ISO 14001:1996, p.8), for example the emissions of carbon dioxide.

Environmental management system (EMS): According to the definition of the ISO 14001-standard (ISO 14001:1996, p.8), an environmental management system is that part of an organization's management system that includes organization structure, planning, responsibility, practice, routines, processes and resources to develop, introduce, fulfill, revise and keep up the environmental policy.

Sustainable development: Sustainable development has been defined as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Report of the World Commission on Environment and Development, 1987).

The "polluter pays" principle: The "polluter pays" principle means that the polluters have the responsibility of their impact on nature. The environmental regulation is based on this principle (Dobers, 1997).

2. METHOD

I started my work with studying literature about environmental management systems, focusing on the driving forces for an EMS and the problems and opportunities that different authors have perceived with the system ISO 14001. I also tried to find literature on EMS in developing countries, and found a few articles and case studies.

This chapter will describe the working procedure I have followed, mainly inspired by the book *Qualitative interviews*, by Steinar Kvale (1997).

2.1 Qualitative interviews

An interview is, according to Kvale (1997), like a conversation with a purpose and an objective. In research, interviews can be used either in qualitative or quantitative methods. Quantitative interviews have the purpose of generalizing in statistical terms, while qualitative interviews have the purpose of going more in depth of the specific case. Kvale defines the qualitative research interview as "an interview, with the purpose of acquiring a description of the respondent's view of a phenomenon, trying to interpret the meaning of this described phenomenon"

It is important to think a lot about the purpose and the contents before you start the interview. If not, many questions can remain unanswered at a later stage. Kvale gives a suggestion on a relevant procedure for the work, divided in seven steps:

1. Thematization
2. Planning
3. Interview
4. Transcription
5. Analysis
6. Verifying
7. Reporting

The purpose of the *thematization* is to formulate the aim of the study and describe the theme. In order to do this well, there is a need for a clear purpose and a thought about the theoretical perspective. Three questions are to be dealt with: What, why and how? *What* is about the subject being studied, *why* describes the purpose of the study and *how* explains the kind of interview and analysis of the method.

The *planning* is about disposition of time and money when it comes to the seven stages of the research. Already from the beginning a view of the final version should be created in order to have a target for the work. Another important thing to consider is which is the target group. The number of respondents depends of the purpose of the study. In a qualitative approach, the interviews should not be too many, since that would prevent more through analysis.

The stage of *Interview* should not be started before the thematization and the planning is done. The semi-structured interview that is used in this study means that instead of asking precise questions, an interview guide is developed, with suggestions and areas of questions. This is a

guideline, that can be followed strictly, or used only as a help for the structure. The questions should be short and easy to understand.

During the *transcription* stage, the interview material is prepared for analysis. Normally this is being done by transcribing the tapes into written documents. Depending on the purpose of the interview, the transcription should be done word by word, or in a concluded form. In this study, the transcriptions were done word by word, since all the material was very important for understanding the respondents' point of view.

During the *analysis*, the transcriptions are organized and the meaning of the text is interpreted. In the analysis it is important to strive for objectivity, through for example discussing the interpretations with others.

The *verifying* stage is about the trustworthiness of the text. Reliability and validity should be stated and a quality control should be performed.

Reporting is the last stage in the working procedure. Here the method and results of the study should be reported in a scientific way.

2.2 Choice of method

The method used in this essay is a qualitative case study, built on interviews with a semi-structured character. The reason for choosing interviews was to make a deeper dialogue possible with every respondent and the qualitative approach helped these interviews to encompass a holistic perspective of the company situation. It also gave the possibility to get non-measurable results, like the respondents' opinions of the system (Halvorsen, 1992).

A case study should be carried out in its natural surrounding (Creswell, 1998). Conducting the interviews at the company facilitates access to information, like data bases, and also gives the possibility for the respondents to ask the other employees for information. I visited all of the four studied companies in order to conduct the interviews there. The interview guide was my frame during the interviews (see appendix 1). The questions asked were mainly of open character, leaving the respondent free to talk about the issues. With a few exceptions, the same questions were asked to all of the respondents. This made it easier to compare the different companies' work with ISO 14000. The questions in the interview guide did follow an order, but the order was sometimes mixed during the interviews, in order to let the respondent talk unobstructedly. Some follow-up and clarifying questions were added when needed during the interviews. Leading questions were omitted in order to get the personal opinions of the respondents, and not reveal my own values in the field of the study (Kvale, 1997). Also, only one question at a time was asked, since it might otherwise be difficult for the respondent to answer the questions and since the answer in that case might become unclear.

In my study, four different companies were studied. The purpose was not to generalize the knowledge obtained, but to analytically describe the result of the study in order to illustrate similarities and differences.

2.3 Literature study

The basis for the frame of reference in this study consists of literature and articles that I have searched for in LIBRIS, the national data base of Swedish libraries. The key words used were, among others: "Environmental management system", "ISO 14001", "developing countries" and "sustainable development". The theoretical material used was as recently published as possible and, although literature covering case studies in developing countries was hard to find, most of the existing cases in this area are treated in the study.

Additional information was found on the internet. The web-search pages were a good help in achieving additional case studies and the web page of from the International organization of Standardization (www.iso.org) provided useful links.

2.4 Choice of case companies

A list of the ISO 14001-certified organizations in Uruguay was provided from the Uruguayan standard organization UNIT (Instituto Uruguayo de Normas Técnicas), which represents ISO in Uruguay. The companies were approached by mail, and several of them were interested in contributing to my study. Four of them were chosen, since I wanted to make deeper studies of a few objects, rather than trying to generalize among many objects. Since the objective was to illustrate differences and similarities in the implementation process, companies in different industries and with both national and international owners were selected. The first case study is about *Ecasol*, which is a local exporter to important car companies. The second one is about *Pinturas industriales,* a paint producing company, which is an example of a traditionally polluting industry also exporting to important customers in foreign countries. This case will be followed by the one about *Teyma,* which is an internationally owned construction company. The last company is *Portones Shopping*, which is an example of a Uruguayan-owned shopping mall.

The respondents in each organization were the environmental managers or the environmental coordinators of the company. In one of the cases an environmental consultant was also present during the interview. In some cases other employees were approached and asked briefly about their opinion of the EMS. However, within the scope of this study, some deeper interviews with the employees were not possible to conduct. Since I wanted to give a broader perspective of environmental management in Uruguayan companies I chose to focus my efforts on four companies, with the consequence of fewer respondents in each company.

Apart from taking notes, a tape recorder was used during the interviews in order to avoid having to write down and memorize everything that was said. I am aware of the possibility of the respondents not saying what they really mean and getting nervous because of the tape recorder. However, I consider that the risk of this occurring is present both with or without a tape recorder, and I think the advantages of using it overcome the disadvantages.

The respondents have received the transcriptions after the interview, with the possibility to make corrections.

2.5 Method for analysis

After collecting all the empirical material through conducting the interviews and reading the company documents provided, the work with the material started. It was introduced by carefully listening to the tapes and writing down the content. This was best done soon after each interview (Kvale, 1997), since the information was still remembered. Each tape from the interviews was transcribed and analyzed in detail.

In analyzing the empirical material, previous studies and theories provided guidance. The theory, analysis and discussion are structured in similar ways.

3. THEORETICAL FRAMEWORK

In this section I will give the theory that will form the basis for later comparison and analysis of the empirical material collected during the interviews. I will start by giving a brief introduction to Environmental management systems (EMS) and specifically ISO 14001 (3.1). This will be followed by a description of the most common driving forces for companies in adopting an EMS (3.2). Then follows a description of the most common problems and opportunities that the literature about ISO 14001 mentions (3.3 and 3.4), followed by a section on ISO and developing countries (3.5) in order to describe the particular driving forces, problems and opportunities in a developing country.

3.1 Environmental management systems and ISO 14001

There are various kinds of environmental management systems, both internal, within organizations or sectors, and general, for all kind of organizations. ISO 14001 is the most common and internationally known one (Bansal and Hunter, 1996). EMAS is the EMS of the European Union, and it is in many ways similar to ISO 14001, but requires a public environmental report, which is not required by ISO 14001.

Within the ISO 14000 family there are several different documents (ibid.). For example, the document ISO 14004 provides additional guidance and useful explanations and complements ISO 14001 (www, ISO, 2003). The new auditing standard, ISO 19011, is equally useful for EMS and quality management system audits. It provides guidance on principles of auditing, managing audit programs, the conduct of audits and the competence of auditors. The ISO 14001 standard requires firms to identify, measure and control their environmental impact (Bansal and Hunter, 1996). There are six steps that must be followed in order to comply with the ISO 14001 standard:

1. Developing an environmental policy

In an environmental policy the basic aims of the company in the environmental field are stated for the public to know what the company is doing and where it is heading with the EMS.

2. Identifying the firm's activities, products and services that interact with the environment

The term “environmental aspect” is used, referring to the part of the firm’s activities that affects the environment. The documentation is normally organized aspect by aspect, not department by department. This means that the company is seen as a “black box”, where each environmental aspect is treated individually, tracing the sources of the aspect in the whole company. This makes it easier to work with the EMS, than if each department would have been treated separately.

3. Identifying legislative/regulatory requirements

The organization must also develop routines in order to be able to identify and access different laws and other regulations in the environmental field, by which the operations of the company are affected.

4. Identifying the firm's priorities and setting objectives and targets for reducing its environmental impact

Each environmental aspect must be evaluated and if it is considered to have a significant environmental impact, routines must be developed and detailed objectives must be stated.

5. Adjusting the firm's organizational structure to meet those objectives, such as assigning responsibility, training, communication and documentation

The firm shall identify the need for training of employees, especially those whose work can contribute to a significant environmental impact. Routines for external and internal communication must be stated, e.g. communication with authorities, customers and other companies as well as communication between different levels of the company. The documentation must be adequate and of current interest. It must also be accessible to the employees.

6. Checking and correcting the environmental management system

In this phase the organization must develop routines to supervise and measure activities that may have an impact on the environment. This phase also includes internal and external audits of the system. The internal audits are being conducted by someone within the organization, whereas the external audit is conducted by a third party.

These six steps can be summarized and simplified in this PDCA-circle (Figure 1). PDCA stands for: *Plan* (step 1-4), *do* (step 5), *check* and *act* (step 6).

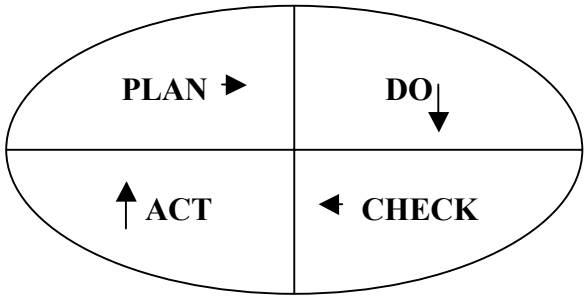

Figure 1
DENIM´s circle. This circle shows the process of the continuous improvement of ISO 14001. (Söderstedt et al.,1997, 213).

After the company gets the certificate, external audits will be run every 6 months to check that they are complying with these steps and that continuous improvement is taking place. The auditor has to be accredited by an accreditation organization (www, ISO, 2003). There is also a representative organisation of ISO in most countries, which sometimes is also accredited for auditing.

ISO 14001 is a voluntary measure and the standard focuses on the firm's processes rather than the environmental performance. There is no level of environmental performance that has to be fulfilled in order to comply with the system. That means both a heavily polluting industry as

well as an industry with very little impact on the environment can participate. The organization sets its objectives according to its own situation and its own possibilities. This will be further discussed in sections 3.3 and 3.4 on problems and opportunities.

3.2 Driving forces for implementing an EMS

Almgren (1998) suggests the following driving forces for implementing an environmental management system. They are divided into four areas:

1. Gains from systematization and structure of the environmental work
2. Environmental concern
3. Customer requirements and competitive advantages
4. To lower the costs

These gains will further be discussed below.

Gains from systematization and structure of the environmental work refers to the suggestion that the environmental performance of the company will improve if the environmental work is more structured and the responsibility is more distributed among the employees (Almgren, 1998, p37). Every employee shall know what his or her responsibility is in the environmental work.

Environmental concern has to do with the company implementing the environmental management system in order to reduce its environmental impact as a way of taking its social responsibility. This factor is related to the common environmental debate we have today in society about a reduction of the physical environmental impact to avoid future negative consequences (Almgren, 1998). In the discussion chapter this statement of the author will be further discussed with a global perspective (see chapter 5.6).

Customer requirements and competitive advantages are related to the fact that customers, both industries and individuals, often require products from companies that can show they are proactive in their environmental work (ibid.). The customers are then pushing the company to implement an environmental management system. Otherwise they might choose to buy from another company. Implementing an EMS might thus become a requirement in order to stay in the market. It might also be a way to attract more and bigger customers or improve the general image of the company for long-term benefits.

To lower the costs is a driving force seen differently depending on the time perspective. In a short-term perspective the implementation of an environmental management system can be negative for the economy of the company since the implementation costs money. The cost of certification is often relatively large for a small or medium-sized company (pers. comm., Prando, 2003). Also the time for documentation and reorganization has to be included in the costs. The changing of processes may often mean an even bigger cost than both the certification and the time needed for documentation and reorganization.

However, in the long run costs may decrease since the need for energy and raw material commonly decreases (Almgren, 1998). The company can, with the help of the EMS, make their resource use more effective and thereby save money. Commercial benefits can also lead

to decreased costs, like an improved reputation or more and larger customers (pers. comm., Prando, 2003).

The four driving forces described above are theoretical and in the perspective of industrialized countries. What the practice shows, and especially what it shows for developing countries, will further be evaluated in this study.

3.3 Benefits from the implementation of ISO 14001

Studies of the advantages of ISO 14001 in industrial countries have shown some major advantages for organizations that have implemented the system (A-C):

A. Less environmental impact

Is the work with the standard ISO 14001 really contributing to less environmental impact of the companies? According to ISO 14001, an environmental management system should be focused on preventing environmental problems rather than on repairing already made mistakes. There are numerous preventative activities that can lead to less environmental impact and, according to Nordström (1997), some of them are:

1. improved routines for effluents to air and water
2. environmental demands in new investments
3. recycling
4. minimization of resource use
5. substitution to less environmental hazardous chemicals

The work with an EMS gives companies a better risk preparation, which may lead to fewer environmental accidents (ibid.). Another advantage of having an environmental management system is that many companies set higher environmental objectives than legally required and they bring up areas not ruled by the law. It is hard to say if the work with ISO 14001 really leads to any improvements for the environment, since the real environmental performance differs considerably between companies. It might also be hard to see the long-term consequences of changes. Nonetheless, with an EMS, environmental concern will grow among the employees and the other stakeholders of the company, like suppliers and buyers, and a more sustainable society will require more environmental concern.

Still, the limits with an EMS are many. The management system does not guarantee that environmental problems are fully understood by everybody in the organization. Neither does it guarantee that the consequences and effects of the operations of the company are considered in such a wide scope that future pollution is avoided. Environmental problems are so difficult to measure and analyze that finding a tool dealing with all these questions is impossible.

B. Improving relations with stakeholders

The company is interdependent with all people related to the company, for example neighbors, governmental bodies, suppliers, shareholders, customers, etc. A good relation with these stakeholders can lead to an improving position on the market (ISO 14004:1996).

According to standard ISO 14004, the EMS creates confidence among these stakeholders since:

1. The company is committed to follow the demands in their policy and their environmental objectives
2. The environmental work focuses on prevention
3. The compliance to laws and other regulations can be proved
4. The EMS includes continuous improvement

These factors make it easier for a customer or another stakeholder to control and follow up what the company actually is doing in the environmental field and what they are *not* doing.

C. Benefits for the public sector

For the public sector the initiatives and dedication that companies show in environmental issues could lead to a more effective control system (Walsh, 2000). If the companies face financial benefits from taking a proactive role in the environmental management, for example through adopting an EMS, it might make them more interested and concerned about environmental issues. In this way it will be easier for controlling governmental bodies to check and correct the environmental management of the companies.

If the benefits of implementing an EMS are similar or different in industrialized countries and developing countries will be discussed in the analysis.

3.4 Problems with ISO 14001

In the following section some of the most common problems with ISO 14001, revealed by earlier case studies, will be presented.

A. No level for environmental performance

An environmental management system says nothing about how "environmental friendly" the company is; only that it has chosen to work systematically with environmental issues (ISO 14001:1996). The problem this implies for companies is that the stakeholders can lose confidence in the company when they discover that the company is not perfect in an environmental perspective, although it is certified. There are no general demands on where to set the level of the environmental performance; only that the operations of the company shall comply with current regulations and that they should work on the principle of "continuous improvement". This level of continuous improvement is entirely the concern of the company. That means two companies in a similar industry with similar operations can reach far different environmental performance, even though both comply with the standard. The companies set their own objectives, within the frames of the system they are working with. That is why the environmental performance differs between the companies and the system does not guarantee any environmental improvement.

Although the system does not have any level when it comes to environmental performance, the standard leads to requirements that can improve the environmental impact (Jackson, 1997). For example, the organization must work and build the EMS according to the policy. This makes the company committed to prevent pollution. The organization must also commit

itself to follow laws and other regulations. The company must also set up environmental objectives and perform specific programs in order to meet these objectives. Another important requirement that improves the environmental impact is that organizations must commit themselves to reach continuous improvements within their EMS, which should result in improved environmental performance.

However, within the requirement for continuous improvement another problem appears (ibid.): The companies could hide their possibilities to make improvements. This could be done in order to be sure of always having something to improve. So, instead of performing a major environmental improvement at once, companies can split up the improvements over a longer period, in order to be sure of complying with the requirement for continuous improvement.

B. Costs of implementation

The problem of the high implementation costs of ISO 14001 is one of the biggest for companies in developing countries (Rong et al., 2001). Costs appear when the company performs environmental improvements and makes new investments (Nordström, 1997). Costs also appear for employees performing the work of implementing and maintaining the system and also for the revisions that have to be conducted by the certification companies.

However, many companies see the problem of costs as not too important because they can see the benefits of the system covering the costs, for example reaching a bigger market share or being able to stay in the market.

C. Documentation

One of the biggest problems that companies perceive with an EMS is the high demands on documentation (Nordström, 1997). There is a risk that companies focus all their resources on documentation, instead of following and developing the environmental objectives and the environmental performance. There might also be a risk that the employees in charge of the documentation feel that it requires too much of their time, and instead of documenting the problems they pretend not to see them. However, of course there is a meaning with the documentation. For example, the day when one employee is not there, it is important to have his routine documented, so that the other people at the company can take the responsibility for this.

3.5 ISO 14001 and developing countries

For developing countries the most important driving force for implementing an EMS is often to reduce non-tariff trade barriers (Rong et al., 2001). A case study made on Brazilian companies (Maimon, 2000) indicates that the companies with the greatest international transactions also show the greatest environmental responsibility. Included in this group are exporting companies, which are often pressured to adopt the environmental and ecological standards of the countries to which they export. Also, the suppliers for these companies are affected by this pressure (Walsh, 2000). Companies that depend on international funding from *financial institutions,* for example the World Bank, have to submit environmental impact reports, and projects to solve negative environmental impacts, in order to receive loans (Maimon, 2000). There are also multinational companies, which, due to shareholder and consumer demands, are forced to improve their environmental performance. In the Brazilian

case the pressure from the local population has been a driving force for the environmental certification of companies. In the Amazon region, also the international *non-governmental organizations* are very active in the pressure for companies' environmental concern. A study of companies in Argentina (Walsh, 2000) also brings up the possibility for companies in traditionally environmentally hazardous sectors, like the petrol and chemical industry, to improve their image through the certification of an EMS.

Environmental problems in developing countries' production have often been observed by the media (Rong et al., 2001). TV and papers make people and organizations in society more concerned about environmental impacts as a cause of company activities. The different actors in society also push *regulators,* such as government and municipalities, to develop stricter environmental laws, that affect the company. The use of ISO 14001 can help companies to comply with the law, since it provides a systematization of the environmental work in the company (Walsh, 2000).

The financial benefits of safer *products* and less *resource* use are also reasons for companies to choose to adopt an EMS (Walsh, 2000). As already described above (3.3), these benefits could evolve from a more effective energy use, less waste amount, etc. In this respect, Walsh points out that there could be a difference between small and large companies, since the proportional changes are often bigger in a small company than in a large company, where the changing process is more moderate. However, it might be easier for large companies to make a long-term investment, which often is a requirement to make an EMS pay-back.

All the facts described above have contributed to the emerging opportunity for developing countries of guaranteeing environmental concern in their production through an EMS. The following picture (figure 2) gives a clearer view of the factors that can contribute to a company in a developing country adopting an EMS:

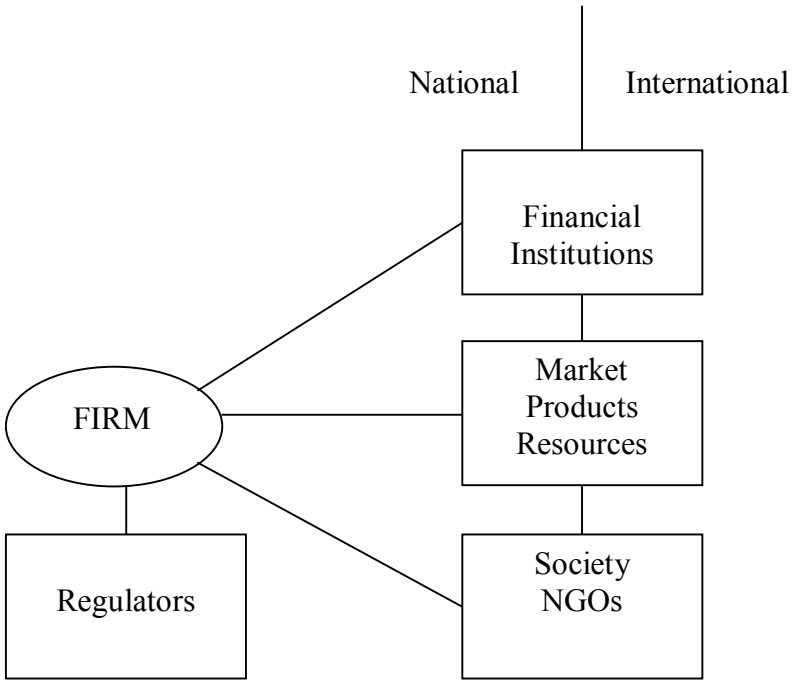

Figure 2: The interconnection between the different stakeholders and the firm (Maimon, 2000, with minor modifications).

For companies, that have the resources to implement an EMS, this implementation could lead to a possibility to improve the organization of the environmental work, and also to reduce environmental risks (Walsh, 2000). But for small companies, that do not have the financial possibilities of implementing an EMS, this could lead to the increasing of existing trade barriers, when they have to compete with certified companies in their own country, or even in other countries. It may be of particular value to support these companies in their environmental management efforts.

In a perspective of sustainable development the whole society would benefit if more companies could implement an EMS (Rong et al., 2001, p.4). Improvements in the environmental management would, in the long run, benefit the companies as well, meaning less environmental taxes and fees, and possible cost reductions through a more effective use of materials. But in a company perspective the competitive advantage is of greater importance than general environmental concern and the benefits of adopting an EMS must exceed the perceived problems with the system, such as the cost of implementation.

ISO has an international committee on developing country matters (DEVCO) that has been created to assist developing countries in taking part in the development of International Standards (ISO annual report, 2001). DEVCO has members from the standard institutes of over 100 countries, both developing and developed ones. ISO strives to help organizations in developing countries with the implementation of ISO 14001 in order to make it easier for them to comply with the standard. They organize seminars and courses for environmental managers in developing countries, financed by local sponsors and ISO itself.

3.6 The concept of CSR

Corporate Social Responsibility (CSR) is a quite new concept. Many companies today strive for the integration of social, environmental and ethical issues in one management system. ISO is actually today working with providing a management system including social as well as environmental aspects (pers. comm., Benia, 2003). The respect of ethical values, persons, the community and the environment will be the basis for this system (www, Proyecto Deres, 2003), but certification is not yet possible. However, many companies today are working towards these issues in a more or less structured way (ibid.) and some of them will eventually have their environmental management as a part of this wider management system, and not an issue of its own.

4. EMPIRICAL FINDINGS

4.1 Organisations and institutions related to ISO 14001 in Uruguay

To get a view of environmental management in terms of the situation that companies face in Uruguay today, I will present what government and NGOs do in Uruguay in order to facilitate for companies in the adoption of an EMS.

Proyecto Deres is one of the non-governmental organizations (NGO) working in order to facilitate for companies incorporating the concept of corporate social responsibility within their organization. UNIT, which is the Uruguayan standard organization, is a member of Deres. They have also projects and education for companies and students in the area of management systems. The Ministry of Environment is working, among other things, with regulation and nowadays also working within a system to indirectly facilitate for companies in the implementation of ISO 14001.

4.1.1 Proyecto Deres

Proyecto Deres is a non-governmental organization that started on the initiative of some students of Universidad Católica in Uruguay in 2001 (www, Proyecto Deres, 2003). Its members consist of 60 companies, more or less involved in the area of Corporate Social Responsibility (CSR), and their mission is to promote the concept of CSR in Uruguay (pers. comm., Shaw, 2003). This is being done by supporting and organizing different social projects that companies hold together with municipalities and other organizations in society. This emerging possibility, i.e., companies incorporating social, ethical and environmental aspects in their organizations, will, according to the president of Proyecto Deres, Eduardo Shaw, hopefully contribute to a change both in the external and the internal communication of the organization, and thus make people more concerned about ethical and environmental aspects in society.

The three work phases Deres have developed so far are:

1. Indicating objectives

Proyecto Deres sends out an inquiry to all the member companies about their activities in the above-mentioned areas of CSR. Here the companies can mention their existing activities and their objectives and mission in the respective areas. The objective of this inquiry is to indicate the most common and important objectives that the companies work with in the area of CSR. This is later going to become a basis for the program of Deres, and eventually other companies will also be requested to answer this further developed inquiry.

2. First step manual

The second step the organization has developed in their program is the first step manual. This is intended to be a guide for companies wanting to start their work with CSR, but not yet having sufficient knowledge and insight in the area. Tools for each of the components of CSR will be provided in this guide.

3. Social accounting

The third step this organization is working with is the social accounting, which means that the social, ethical and environmental investments and enforcement of the companies are calculated as a part of the bookkeeping and presented in a special report.

In the environmental field, which is one of the areas of Deres' definition of CSR, the projects are divided into the same three categories as described above. In the first category, the environmental management of the companies is identified. In the category of developing the "first step guide", the general environmental problems and an introduction to environmental management is presented. The guide is not focused on any particular EMS, like ISO 14001. In the third step, about developing a CSR report, environmental issues, like effluents and waste amount as well as energy use and inversions in environmental improvements are presented.

The Director of Deres, Eduardo Shaw, emphasises the fact that program participation is voluntary. There is a fee to enter the program, which is the funding of the project, and in return the companies will get these tools to use in their work in the area of CSR. Since the project is still quite new, the results of their work are still hard to evaluate. The Director of the program also points out that the concept of CSR is quite a new phenomenon in Uruguay, and that it will take time until this becomes a well-known concept.

However, this is an example of how an NGO can work in order to extend the environmental concern and help companies to introduce the concept of CSR. Since the members are companies already involved in the environmental field (many of the members are certified with ISO 14001), the project contributes to the possibility for these already involved companies to work together in order to extend the environmental and social concern in other companies and in other institutions of society.

One of the interviewed companies, Portones Shopping, is a member of Proyecto Deres. In the empirical part their view of Deres and corporate social responsibility will be further discussed.

UNIT (Instituto Uruguayo de Normas Técnicas), the standard organization in Uruguay, is also a member of Deres, and it is more closely presented below.

4.1.2 UNIT

UNIT (Instituto Uruguayo de Normas Técnicas) is the national institute of technical norms in Uruguay (www, UNIT, 2003). It is the national representative of ISO in Uruguay and has the mission of promoting ISO standards in the country. UNIT is also accredited to conduct audits both in Uruguay and in other countries. UNIT also offers courses for managers and students and performs promotion activities for getting the standards known.

There are currently 29 companies in Uruguay certified with ISO 14001 (mostly certified by UNIT) and 250 certified with ISO 9001. The reason so few companies in Uruguay are certified with ISO 14001 compared with ISO 9001 is, according to the director of UNIT, Pablo Benía, that ISO 14001 is more recent, but also that Uruguay is a country where the government, institutions and companies do not set requirements on ISO 14001. A contributing

fact is also that Uruguay today is in a poor economic situation due to the crisis in Brazil some years ago and the recent crisis in Argentina (ibid.). In times of low economic growth few companies choose to certify for environmental management if it is not a requirement to stay in the market.

On the other hand, compared with many countries in Latin America, Uruguay has a relatively large number of environmentally certified companies and UNIT was the first standard organization in Latin America with accredited auditors.

UNIT is cooperating with AENOR, which is the Spanish standard organization (pers. comm., Benia, 2003). The companies certified with UNIT automatically get the certification of AENOR, which give the certified companies more credibility in Europe.

4.1.3 DINAMA

The national commission of Environment (Dirección Nacional de Medio Ambiente, DINAMA), belonging to the Ministry of Housing and Environment, are currently working in order to improve the national environmental regulation. Current rules concerning environmental issues are not collected as a concluded part of the regulation, apart from some laws concerning, for example, waste treatment (pers. comm., Latchinian, 2003). The rest of the regulation, with an indirect connection to the environment, consists of constitutions and laws that are not concluded in a common environmental regulation. There is a need for a new, reorganized, structure of the work of the environmental ministry (ibid.). The aim of this reorganization would be to "speak the same language as the companies", by developing an environmental management system on a country level and also, as a sub-product of this system, develop a new improved environmental regulation. As described earlier, there are relatively more companies in Uruguay certified with ISO 14001 than in many other developing countries. In many cases, business opportunities among companies have developed an environmental concern that the deficient laws and regulations of the government does not require. This is the background to why the government has chosen a new approach in their work of developing stricter and clearer environmental regulation. Many companies with ISO 14001 in Uruguay actually ask for more and clearer rules when it comes to the legal requirements. That would make the implementation of the norm easier for them.

The government of Uruguay is the first government in the world to have an environmental management system on the level of the whole country. According to Aramis Latchinian, there are many reasons why Uruguay, and not other countries, has developed this EMS. One of the reasons is, as earlier stated, the fact that Uruguay is a country with a poorly developed regulation system in the environmental field. The purpose of the EMS is to improve and make the regulation clearer, as will be described in the next section. Another reason is that Uruguay is quite a small country (the population is around 4 million). In this way it is easier to get the whole country's people to agree on the basic environmental objectives. Also, the fact that Uruguay is a country without any natural separations like mountain ranges and that the vegetation is quite uniform, makes it easier to design environmental objectives, valid for the whole country (pers. comm., Latchinian, 2003). The Uruguayan EMS is further presented below.

It should be pointed out that the national EMS is not certified according to ISO 14001, and only a small part of it could eventually become certified. According to Aramis Latchinian

(pers. comm., 2003), there are several reasons why it is not possible to certify an EMS on governmental level in the same way as in companies, the most important reason being the objectives within an EMS. In a company, the objectives that are set are only the ones important for this company. The government, on the other hand, has to seek the possibility of *all* the companies to improve their environmental performance, and give them a tool for doing so.

It should also be pointed out that this national EMS is very new, presented in 2003, the same year as this interview was conducted. The work with creating an EMS started when people in the ministry, working with identifying the problems, discovered that one of the biggest difficulties was the fact that companies speak one language and the government another. The first step in the environmental management is the statement of the environmental policy. The Ministry has to be sure that the policy is simple and possible for all the actors in society to adopt. This is the environmental policy of Uruguay:

The National Commission of Environment (of the Ministry of Housing and Environment) commits to:

1. *Improve*, continuously, the internal management of the National Ministry of Environment

2. *Promote* sustainable environmental production systems and stimulate the implementation of environmental management systems which secure prevention of contamination.

3. *Supervise* the fulfilment of the national environmental regulation and actualizing and deepening its development

4. *Participate* actively in the processes of environmental education of the general population

5. *Increase* the efficient energy use and the development of renewable alternatives

6. S*timulate* the adoption of these commitments among all the actors in society

(Saúl Irureta, Ministry of Housing and Environment, January 2003)

The figure on the next page (figure 3) shows how the government has developed a systematisation of their environmental work, similar to the one of ISO 14001.

After the environmental policy has been stated, work with the identification of environmental aspects begins. Major environmental problems that exist in Uruguay are detected and examined. The reports made are one of the inputs for detecting environmental aspects. When a new report, for example concerning dead fishes in the sea, appears, the government does not have to refute the fact and defend itself. The idea is, instead, that cooperation with the journalists will evolve, with media assisting the government in detecting new environmental aspects. Aramis Latchinian emphasizes that nothing should be kept secret; the public should be able to know every environmental aspect in the country.

The next step is the evaluation of the aspects. This has to be done with criteria that are as objective as possible. The only criteria they have so far are the legal ones. The government can not, as in the case of a company, decide which criteria they can use, because they are

evaluating the performance of other organizations, and not their own, as in the case of a company. Actions taken as the result of a report have to be backed up by the law.

An important outcome of the evaluation is, besides the evaluation itself, a suggestion for improved laws and regulations. Without laws, the evaluation is impossible to make, and that is why the sub-product of the evaluation will be new laws and constitutions. There is currently a group of lawyers working according to this system and they are developing a new environmental regulation.

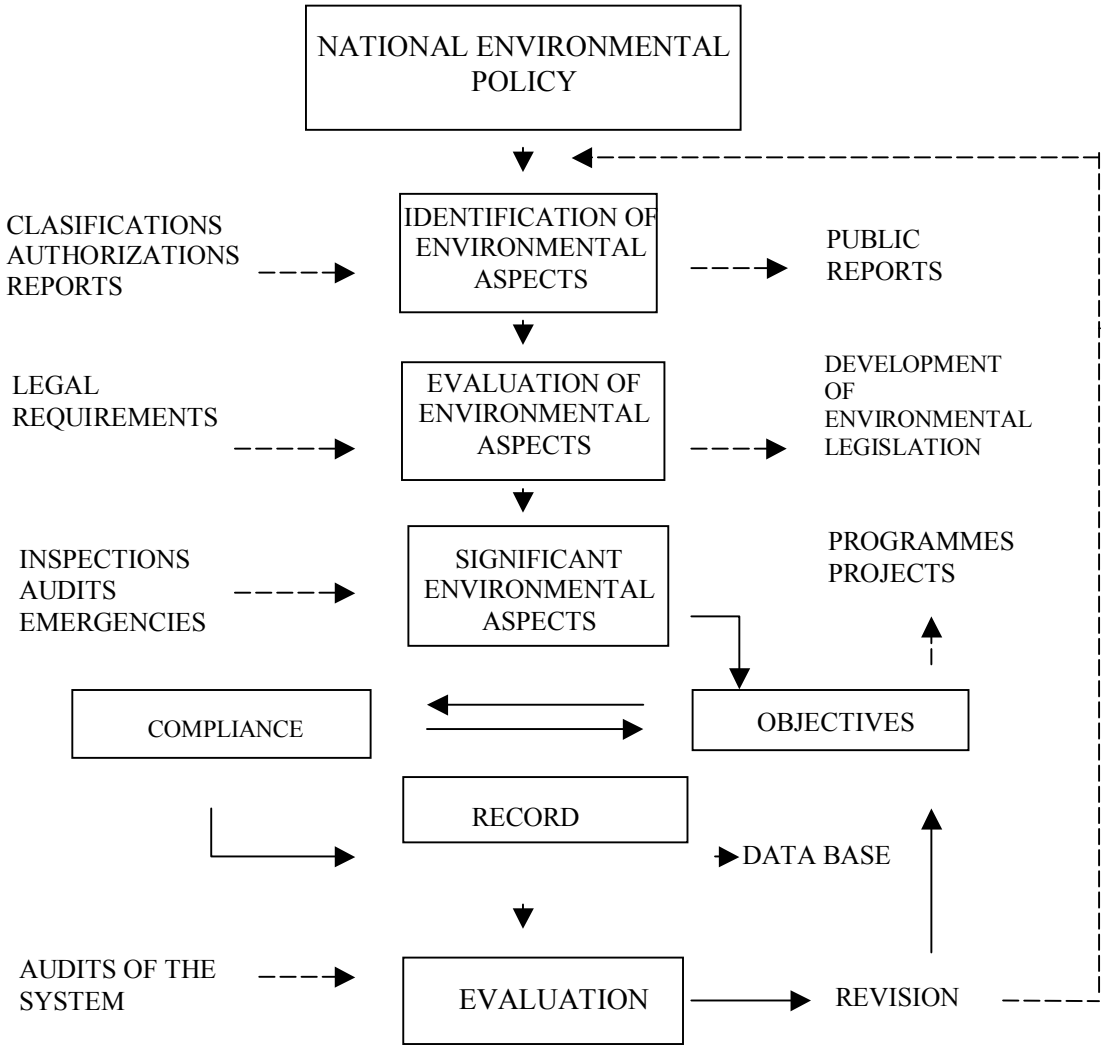

Figure 3: The national EMS of Uruguay. The continued lines show the interconnection between the different steps of the system. The broken lines show the relations between the inputs and outputs of each part of the system (Aramis Laitichian, 2003).

4.2 Case studies

This section will present four case studies; three of businesses in the industry- and construction sector and one of a business in the service sector. The first case study is about *Ecasol*, which is a local exporter to important car companies. The second one is about *Pinturas industriales,* a paint producing company, which is an example of a traditionally polluting industry also exporting to important customers in foreign countries. This case will be followed by the one about *Teyma,* which is an internationally owned construction company. The last company is *Portones Shopping*, which is an example of a Uruguayan owned shopping mall.

I will start by giving each case a presentation of the company. Then I will talk about the driving forces for adopting an EMS. I identified from the theory the most common driving forces for implementing an EMS, and asked the respondents to prioritise which were the most important ones. These results will be followed by a presentation of the most important problems and opportunities that the companies have faced during and after the process of implementation. A short summary will end each case.

4.2.1 Ecasol

Ecasol is largely owned by the Britain multinational company GKN, which is a global engineering company focused on automobiles and aerospace (pers. comm., Gonzales, 2003). Ecasol has 39 employees and the annual earnings are 1.200 million US dollars which, due to the economic situation in the country, is much lower than in recent years. The company produces the part of the car that unifies the gear with the front wheel. It imports pieces from all parts of the world and exports the product to Argentina, Brazil and China. The company has been situated in Uruguay since 1997. The major clients are General Motors, Ford, Citroen, Renault, Honda and Fiat.

The company was certified according to ISO 14001 in year 2001. By that time it was already certified with ISO 9001, since 1998. The reason why the company became certified was principally the requirements of the clients and future possible demands from the corporation. Since the company used to be partly owned by the international group DANA, they predicted the requirement of all member companies having an EMS within some years, and they could see the commercial benefits of having the EMS since one of their big clients, Ford, was putting heavy environmental pressure on the delivering companies. The implementation of ISO 14001 was not essential, but a future possible requirement and a financial benefit, since they would become more attractive as suppliers.

The second important reason for Ecasol to implement the EMS was a genuine environmental concern. The company does not generate any big environmental impacts; the main problem is the garbage. However, the dedication and the concern for the environment were important factors for the managers, as a part of social conduct. The garbage cost was also reduced while introducing the recycling plant, but this fact was more of a consequence than a reason for implementing the EMS.

The environmental work of Ecasol started from an initiative of the corporation DANA, of which Ecasol used to be a member. DANA is a corporation in the design, engineering and manufacture of products and systems for vehicle manufacturers (www, DANA Corporation,

2003). In 2000, DANA invited a group of environmental managers at the member companies to a conference in Buenos Aires, Argentina, where an introduction to ISO 14000 was held (pers. comm., Pozzoti, 2003). With this knowledge they went back to implement the system in the company. The group of DANA members continued to meet every three months.

The company was certified together with their neighbour Talesol, which is a company with a similar production and which also was, and still is, a part of the DANA group. Since the two companies have effluents in the same area, there was no reason for the companies to certify independently. For example, if a report is made, there is no way to trace the effluents to one of the companies, since all the waste exits are the same.

Since the company is small and the investments cannot be too big, the first thing that was made concerning the environment, was to construct a roofed area to store the separated garbage. Cans and metal containers were installed in the plant, painted with different colours in order for the workers to separate the garbage into the respective container. For re-certification in the following year, a plant for the treatment of liquid effluents was constructed.

The main environmental aspects of the company are: solid waste, liquid waste, electric energy and water consumption. During the years the priority has changed. After solving the garbage problem it is no longer the primary problem of the company. Now one of the most important aspects is the washing of the painting cabin. Also the clay is one of the most important aspects. Although it is not a heavy contaminant, it still contains some solvents and, compared with the rest of the environmental aspects, it is still a problem. Javier Gonzalez points out that the environmental impact of the company is very low. After solving the most important aspects, the company is not an important polluter anymore.

Benefits and problems perceived with ISO 14001

The advantage of being a small company, according to Gonzales, is that there are few people working with the system. When the four people in charge of the EMS sit down together to make decisions, no one leaves the room if they do not all agree upon the decision. This might be more difficult in a bigger organization. One of the disadvantages with being a small company is, according to Gonzales, that there are no resources for dedicating more than one day on the same subject. Since all of the employees have their common duties to work with as well, they have to split up their time for environmental issues. This makes it difficult in times before an audit, when everything they did not have time to do before, has to be corrected.

Another problem perceived with the implementation of the EMS is the deficient regulation and control on a national level (pers. comm., Gonzales, 2003). This leads to a difficult situation, for example, when it comes to the waste problem of the company. To find out the legal requirements Gonzales and his colleagues studied numerous laws and rules, and found that a form was to be filled out in order to be permitted to leave the solid waste in the municipal garbage plant. Since they did not have this form they thought that the garbage recollecting company took the waste to another place. Since they wanted to do the things correctly, they one day followed the truck to the garbage plant. The truck *did* go to the municipal garbage plant, they passed the control, the garbage was weighed and after that the truck drove back. No form was shown and the garbage was not controlled.

This is the problem with the laws, according to Gonzales. The few laws that exist in the environmental field are not followed up and controlled. In that way, companies can go on doing things in an incorrect way, and still keep their certificate. The environmental performance, what you really do, is up to the company. However, according to Gonzales, this is not a problem of the ISO standard. The standard has to be like it is since it should be adapted to all kinds of organizations of all sizes. But the deficient regulation and control for the companies is a problem. When looking for guidelines on how to do things correctly it is important to have clear regulations. In the case described above, the company was discovering and correcting the problem since they had the intention to do things correctly. In many other cases, this might be a problem without any possible way of detection, if there is no governmental control. Without clear rules and the threat of being denounced, there are companies that lack the incentives to do things correctly.

Another problem on the way to certification was how to determine the environmental aspects of the company. The term "environmental aspect" is used, referring to the part of the firm's activities that have negative consequences for the environment (Bansal and Hunter, 1996). During the seminar in Buenos Aires the corporation of DANA presented a strategy to detect the environmental aspects (pers. comm., Gonzales, 2003). The basis of this strategy was to detect the environmental aspects of each department, one by one. This strategy was followed and after a year of work a pre-audit was performed by AENOR, the Spanish standard certification (at that time there were no accredited auditors of UNIT). The auditor did not reject the presented work, but he told them that this was not what he wanted to see. He also told them that if they wanted to present their work to the certification auditor he would not stop them, but this was clearly not what he wanted them to present. The auditor explained that this was not the strategy they used in Europe today, and that it was not sure they would pass the audit if the environmental aspects were presented the way the DANA group had taught them. He also explained the advantages of the facility in using the European system, where the company is seen as a black box, where each environmental aspect is evaluated independently of department. There is one list for each aspect. For example, energy consumption of all departments is evaluated separately. The same is done with solid waste, liquid effluent, etc. In this way the management of the system becomes easier and less time consuming.

With this background, the company had to rewrite all the work and change it into the new strategy. But Gonzales claims that in the end it was worth the time rewriting the papers. With this new approach they have saved both time and money and they passed the certification easily. The fact that they were taught a method that was not used anymore by the people who were going to conduct the audit, is one of the consequences of the unspecific character of ISO 14001. But on the other hand, it is not likely that it would be possible to design an EMS that could be very specific, and still valid for all kind of organizations (pers. comm., Gonzales, 2003).

When asked about the problem of some companies implementing an EMS just as a legitimacy tool, Gonzales believes that doing that would only lead to a future cost for the company. "Implementing the management system in a bad way, both in the aspects of quality and environment, is more difficult than implementing it in a good way". He explained that it does not require an enormous amount of resources to comply with the norm. For example, in the case of Ecasol the most important environmental action was the effluent plant, but the inversion was too big to be done the first year of audit. But a plan for the process for constructing this plant was presented for the first audit, and the company passed the

certification. The year after, for the re-certification, the plant was constructed and in this way the requirement of continuous improvement was controlled. Now, in times of bad financial times for the company, the objectives are lower; it would be impossible to require larger investments in the environmental field when the company is struggling to survive.

A great benefit of the system has been the cost reduction of garbage treatment. The company used to dispose annually 16 tonnes of solid waste and now, after the implementation of ISO 14001, they only dispose 1 ton, annually.

The water and electricity consumption has also been reduced. Another benefit of the implementation is that Ford is still a customer. Without the system, Gonzales believes that they would have lost this client. Ecasol calculates some savings from implementing the EMS, but it is not very significant according to Javier Gonzalez. However, at least the implementation has paid off.

A summary of the most important driving forces, benefits and problems of Ecasol's implementation of ISO 14001 is given below.

Driving forces:	*Customer demand*	*Demands from the corporation*	*Environmental concern*	*Cost reasons*	*Improve image*	*Benefits from systematization of the environmental work*
	1	2	3	4	5	6

Problems:
- lack of resources for a small company
- weak environmental regulation in Uruguay
- unclear guidance for ISO 14000

Benefits:
- cost reduction
- keeping customers

4.2.2. Pinturas industriales

Pinturas industriales is a paint producing company founded in 1977 (pers. comm., Oddone, 2003). The paint is used for industrial and architectural maintenance and paintwork for cars. It is sold through retailers, with their own brands and the company has also their own brand *Lucol*. The three kinds of products the company produces are: powder coatings, liquid painting and synthetic resins. The company got certified with ISO 14001 in 1998. This made the company the first in Uruguay with this certificate.

Recently the company has been badly affected by the economic crisis in Uruguay. It used to sell to retailers in Argentina, Brazil and Paraguay. Now, since the crisis of the countries in this region, the sales only go to the local market and the company is not exporting at all. The personnel has decreased from about 120 to about 60.

One of the most important driving forces for ISO 14001 is customer requirements. Since the company used to export to international retailers, it was expected that within some years there would be a requirement for having an EMS. The general environmental concern and legal requirements were also driving forces, since the company is contaminating and the environmental impact is significant. Cost reduction was not an important driving force, although some costs have been decreased, during the certification processes.

The initiative of implementing ISO 14001 came from the director of the company. In 1997 a very well known consultant named Raul Prando was hired. He helped them with the implementation and the work continued during almost one year. In 1998 the company got the certificate.

Before having the audits of UNIT every year, an internal audit is being made by the employees of the company, where problems can be registered and corrected. The measures taken so far are, among other things, garbage separation, emission control (especially the volatile organic compounds, VOC), accident prevention and security education among the employees. For example, the employees use masks against the solvent vapors and dust, and are educated about the risks involved. There is a manual for risk prevention and if an accident occurs, a form has to be filled in for reporting. These forms are the basis for further improvements in risk prevention.

Energy and electricity savings are also among the objectives of the company and measures are taken to decrease the use of electric energy, water and fuel.

Benefits and problems

Due to the financial situation of the company, it is hard to evaluate the results of the implementation of the EMS. The biggest advantage reached so far with the system is the green image of the company. When a client asks for the environmental concern of the company, it can show the international certificate, which all of the customers know about. In the past clients used to send questionnaires about the environmental management, but not anymore. Now there is no need for that.

The cost savings of energy, water and the garbage recycling are not measurable, since the production has decreased so much. However, the only way to one day being able to export again and to stay in the international market, will be to have the certificate. In that way one could say that the implementation of ISO 14001 contributes to commercial benefits in the long run, although it is impossible to see them today. The local market is not big enough to sustain the company, so ISO 14001 will be a future requirement to stay in the international market.

One problem that is mentioned about the system is the weak environmental regulation of the country. For example, among all the environmental aspects of the company, only two are mentioned in the law: noise and liquid effluents. The rest of them are aspects that the company is giving priority to, but that the law does not mention. The deficient regulation makes it harder to detect and prioritize among the environmental aspects. The environmental performance of the company is higher than what the law requires, and a future stricter regulation of the country would benefit the company.

However, the biggest problem that is all-embracing the company, is the economic situation of the region. In times of decreasing sales it is an enormous sacrifice to maintain a management system like this (pers. comm., Oddone, 2003). In order to analyze tests in specific laboratories, resources are required and the time people in the company have to dedicate to the system is also a cost. Since it is hard to measure if the costs have paid off, these costs cannot be considered as a specific problem of ISO 14000. But in times of economic crisis they are definitely a problem for the company. All the work with the system requires money. Still, the system has to be maintained; without it there are no future export possibilities. This aspect of the consequences of ISO 14000 in international trade, explains the possible view of the system as a trade barrier, as earlier explained in the theory. This will be analyzed further in the discussion.

In analyzing the case, the most important driving forces, benefits and problems of the company's implementation of ISO 14001 appear to be:

Driving forces:	*Customer demand*	*Demands from the corporation*	*Environmental concern*	*Cost reasons*	*Improve image*	*Benefits from systematization of the environmental work*
	1	-	2	4	3	5

Problems:
- costs of maintaining the system
- lack of resources
- deficient environmental regulation in Uruguay

Benefits:
- commercial benefits
- keeping customers

4.2.3 Teyma

Teyma is a construction company, in a wide perspective. Apart from building construction, their activities also include for example waste- and water treatment and electricity lines (pers. comm., Cabezas, 2003). The company belongs to the Spanish construction group *Abengoa*, which has extended in many countries in Latin America. The company Teyma has existed in Uruguay for 20 years and 7 years ago the work with quality management systems started and the company received the certificate of ISO 9001. Three years ago the company certified part of their activities with ISO 14001. The company has also management systems for occupational health and safety. The systems are integrated in the way that as many aspects as possible from the different systems are treated in the same documents.

Teyma has 400 employees at the moment. As well as in all of the other case companies, this company has been affected by the tough economic situation of the country and in recent years the sales have decreased drastically.

The logical continuation of the quality management system ISO 9001, was the implementation of ISO 14001. In 1999 the environmental and quality coordinator Fernando Cabezas started the work on the certification together with some other employees. The environmental work is extended in almost all the activities, but only parts are certified.

The work with environmental certification started with a common policy of Abengoa, promoting all the companies having an EMS, and if possible certified with ISO 14001. One important reason for Teyma was also to develop a good image of the company, since it in many ways is related to the environment, not because of being a heavy polluting company, but because of having activities including waste- and water treatment. Fernando Cabezas points out that the company is not obliged to demonstrate their environmental concern for the public, like for example petrol companies and other polluting industries. On the contrary, when they started to work with the environmental impact studies, Fernando Cabezas and his colleagues discovered that the company had really few environmental problems compared with the other industries in the country. So, as described above, the focus on the environmental work was to build the image of a "green" company. In the long run this image will allow the company to reach a competitive advantage (pers. comm., Cabezas, 2003). The idea is to deepen and extend the range of activities in the environmental sector, like water and garbage treatment.

Fernando Cabezas explains that, unfortunately, the company faces no demands from the Uruguayan public to show environmental concern. The concern is not very assimilated in the local culture and it is generally not included within the priorities of Uruguayan companies. In that way the customer’s demand is not included within the reasons for the company having an EMS. However, there are some international organizations that give loans in order to finance a project, only if you have an EMS.

The implementation of ISO 14001 in the company started with the work of detecting the environmental aspects. The major environmental aspects of the company are solid garbage (rests of the construction material), liquid waste (for example used oils) and noise (for example in open areas where machines are circulating).

Since the management systems are integrated, there are many procedures including aspects of quality, environment and safety. For example, before starting a new activity, there is always education for the personnel, where the procedures of precautions are being taught. They have to learn how to manage the garbage, how to follow the signs of safety and how the construction area has to be cleaned.

The sorted garbage is re-used. A lot of material is given to the municipality, where the material is required for many activities. Oil is treated and lead batteries are recycled. Every year thousands of liters of oil are burned in oil furnaces. If the batteries are not reused, lead is removed from them and recycled. These procedures are easy to manage, according to Fernando Cabezas. There is no need for complex treatment of liquid waste, as in many other industries.

A small, but still observed, environmental aspect is the paper and energy consumption of the office. All papers are printed on both sides and the cleaning is performed with environmental concern, both regarding water consumption and products.

When asked about the continuous improvements, Cabezas explains the difference between a constructing company and other producing companies. The producing companies can often prioritise among the most important environmental aspects, "solve" them and then start working with next problem. An example is building a treatment plant for garbage. When it is ready, the next aspect, for example solid waste, can be dealt with. In a construction company it is not possible to “solve” problems in the same way, since new projects start over and over again, all the time. The same problems have to be treated in every project. The continual improvements are therefore performed in other ways, e.g., extending the activities in the environmental sector and, if possible, continually improving the environmental management in every new project.

The system of internal audits is well defined. There is a system of educating internal auditors among the employees of the company. In every audit one person from another department, normally the manager of the department, does the auditing together with Fernando Cabezas or some of his colleagues. Auditing another department, according to Fernando Cabezas, gives the manager good practice for the environmental management of his own department.

Problems and opportunities

It is difficult to calculate if the inversions in the EMS have paid off. When it comes to the environmental management in the office, it is easy to see that the paper and energy costs have decreased. But generally it is hard to evaluate the consequences in a short perspective. However, Fernando Cabezas and his colleagues are convinced that the green image of the company will give it a competitive advantage in the long run.

Some clients, who earlier put no pressure on the company to have an EMS, have lately started to demand some kind of environmental management of the company. Without a certificate of ISO 14001, the clients might have changed to another company. But Fernando Cabezas points out that these benefits are difficult to translate into money.

The only problem that the respondent has perceived with the system is that it sometimes is hard to distribute the work fairly among the employees. The administrative character of the

EMS is not always popular among the employees who have to deal with the documentation in addition to their ordinary work. He also points out the difficulty in motivating the personnel, when the environmental impact of the company is so small. "We can not tell them that we saved the life of 10000 birds or that without the EMS we would have caused an environmental disaster. That is not true" (pers. comm., Cabezas, 2003). It is not easy for the employees to visualize the benefits of their environmental work. However some people who are more interested in environmental issues are more involved than others. Some people take their environmental working duties more seriously than others who leave such tasks behind those with other priorities. Fernando Cabezas says that in general the employees comply with their environmental duties, but how involved they are depends on their background, culture and education. He gives an example of two projects that are soon going to be internally audited. One is in the office in Montevideo, and one is in the countryside. He explains that in Montevideo people are not very concerned about the environment, and some employees give little priority to the environmental work. In the countryside, on the other hand, there is more poverty and people care more about the resources and recycle all they can. This can be shown in the working area of the project in the countryside, where it is often very clean, compared with the working sites in Montevideo.

A summary of an analysis of the most important driving forces, benefits and problems of the company's implementation of ISO 14001 shows:

Driving forces:	*Customer demand*	*Demands from the corporation*	*Environmental concern*	*Cost reasons*	*Improve image*	*Benefits from systematization of the environmental work*
	6	1	4	3	2	5

Problems: - some employees are not motivated to do environmental work

Benefits: - green image of the company gives a competitive advantage in the long run
- having an EMS makes it easier to get loans

4.2.4 Portones Shopping

Portones Shopping is one of Montevideo's big shopping centres and it has been involved with environmental issues since 1994 (pers. comm., Manfredi, 2003). The main activity of the administration of a Shopping centre is the one of renting premises to stores for commercial purposes. The administration is also responsible for the task of developing the commercial, marketing and operative policies, such as guarding, cleaning and maintenance of the Shopping centre.

The reason this company started with the environmental work was not because of customer demand or for reaching a competitive advantage. The work started because of the dedication and environmental and social concern of the board of directors. The operation manager, Fernando Manfredi, used to work in agriculture and when he started working at the shopping centre he still kept his concern for nature and environmental issues. These ideas were spread in the organization and accepted by most of the people. When they saw the quantity of garbage that a shopping centre generated they realized that recycling would both benefit the economy and the environmental impact of the company. This is how the work started. Eventually, they encountered many other environmental aspects of the company and they agreed on developing this and become certified.

In 1999 the company hired a consultant firm to help out with the implementation of ISO 14001. A working group consisting of Fernando Manfredi, the manager of the consultant company (Rafael Pirolo) and two representatives from other departments was founded (pers. comm., Pirolo, 2003). In addition, each department chose a representative for joining the working group's meetings once a month. After the implementation of ISO 14001, Portones Shopping also continued with the work with the quality system ISO 9001. Now they have an integrated system for both standards.

The most important environmental aspects of the company are the residues, the electric energy, the water consumption and the noise (ibid.). Another aspect is the atmospheric emissions, which are dealt with by trying to measure the emissions and seeing in what way they affect the environment. But Fernando Manfredi points out that the emissions are minimal and generally the Shopping centre is a clean industry. The cleaning company is also encouraged to show environmental concern, by using environmentally safe chemicals and having other preventative activities.

The certification of ISO 14001 was the first in the world among Shopping centres and the company received a premium from the international council of Shopping centres. The social aspect of the management was included in the concept already from the beginning in the policies. The company started to invite pupils from schools to the shopping centre as a part of their environmental education. The company is also engaged in social projects, like the contribution to find natural solutions to the problem of residual water treatment in Ciudad de la Costa, and to some projects of poverty reduction.

Benefits and problem with ISO 14001

The costs of the company were heavily reduced by introducing the waste recycling plant (pers. comm., Manfredi, 2003). First of all because of the reduced fees of waste transport to the final landfill. Secondly it was because of the selling of separated items such as plastics, paper and glass. The rationalisation of the energy consumption is also one of the cost savings of the EMS.

The benefit for the shopping centre, which is an industry with low environmental impact, is that the company can be an integrated part of society, contributing to its well-being through, for example, recycling, energy saving, education and contributions to social and environmental projects. In this way, the Shopping Centre's image is well positioned and the investments are actually returning to the organization. This marketing aspect of the EMS is important for the company (ibid.).

The company has all its administration employees engaged in the environmental issues. However, not all of the managers of the shops in the centre showed great interest in these issues. They are collaborating with the garbage treatment and accept the policy, but few of them wish to contribute further in environmental issues. Rafael Pirolo also points out that due to the very hard economic situation companies in Uruguay are facing today, it is difficult to demand any environmental investments. Fernando Manfredi points out that the reason for the lack of interest could also be that there is no demand from customers, which might be the case in the context of international trading companies. The store managers do not have the culture of environmental concern, and if they are not obliged to, and they do not reach any competitive advantage by doing it, then the motives are not strong enough for them. The administration of the Shopping centre cannot put any more requirements on them in times of low sales that most of the Uruguayan companies face nowadays. However, Fernando Manfredi is convinced that environmental management is an investment in the long run.

Another problem with continual improvements within the EMS is that these improvements can never be compromised with the commercial aspects. Fernando Manfredi gives an example: All the heat that the lights of the Shopping centre produce has to be chilled by air conditioning. If they could change the lights to low energy lamps, this abuse of energy could be avoided, but then some other departments claim that this light is not good and that the common light is more popular among the customers. There are many more examples of the struggle between environmental concern and the commercial aspects and you always have to remember that the basic activity is to sell, and nothing in the environmental management can be compromised with this (pers comm., Manfredi, 2003).

Although the company is a member of Deres (see 4.1.1), and although Fernando Manfredi is very interested in the concept of corporate social responsibility, he points out that you have to be careful in integrating political aspects in a company perspective, and it is important to always focus on the objectives of a company. In the case of Portones Shopping, the objective is to rent premises to stores. "Sometimes it is easy to want to go too far. You always have to stay on the ground" (pers. comm., Manfredi, 2003). In times of a difficult situation, like the one Uruguay faces today, the most important thing for managers renting premises is the rentability. Again, you always have to remember the principal objective of the business.

A summary of the most important driving forces, benefits and problems of the company's implementation of ISO 14001 is given below:

Driving forces:	*Customer demand*	*Demands from the corporation*	*Environmental concern*	*Cost reasons*	*Improve image*	*Benefits from systematization of the environmental work*
	5	-	1	4	2	3

Problems: - impossible to compromise with commercial aspects
- store managers not interested in environmental management

Benefits: - reduced costs
- improved image

Figure 4: The garbage separation plant of Portones Shopping

5. DISCUSSION AND CONCLUSIONS

In this section I analyze the empirical findings of this study, based on the theory given in chapter 3. I follow the disposition of the theory, starting by analyzing the driving forces for implementing an EMS. After that, the problems and opportunities of the implementation of ISO 14001 are discussed, followed by a discussion on DEVCO. A short summary will end the chapter.

5.1 Driving forces for implementing an EMS

A summary of the driving forces that the theoretical part of this essay presents is given below, both the ones in general and the specific ones for developing countries. Each of these driving forces is discussed more in detail below:

1. Gains from systematization and structure of the environmental work
2. General environmental concern
3. Customer requirements and competitive advantages (improved image)
4. To lower the costs (safer products and more effective resource use)
5. To reduce non-tariff trade barriers
6. Requirements of financial institutions
7. Pressure from local population and non-governmental organizations
8. Regulators: to comply with the law

Most of the companies in the case studies have not mentioned the *systematization and structure of the environmental work* as an important driving force for the implementation of ISO 14001. The reason is that most companies did not have any environmental work at all before the implementation of ISO 14001. The gains from structure for the environmental work might be an applicable reason in industrialized countries, whereas in most companies in developing countries the environmental work starts with the demands from foreign customers, and the certification is a consequence of this, rather than of the desire of getting a structure in the environmental work. The systematization is more of a benefit as a consequence of the certification than a driving force for it.

The *environmental concern* is stated as an important driving force for the implementation of ISO 14001 for most of the interviewed companies. However, it is hard to say if it really is, or if it is more of a marketing aspect saying that the company is really concerned about the environment. However, in the cases of the interviewed companies in Uruguay, the respondents seemed very involved in and enthusiastic for environmental management and I believe that they are really concerned about the environment, both on a personal level and on a business level. The task of being an environmental coordinator has probably motivated them to being more informed about and involved in environmental issues, although some of them were already very concerned about the environment before the certification work started. The operation manager of Portones Shopping was the initiator of the environmental management in the company and the president of Pinturas Industriales was also mentioned as a very driving person for the implementation of ISO 14001. These two companies were certified relatively early; being the first two companies in Uruguay to be certified with ISO 14001. In these cases it was not because of the demands of the customers (at an early stage), but a consequence of the work of two (or more) driving and seriously committed persons.

The *customers requirements* are, with one exception, the most important driving force for the interviewed companies of implementing ISO 14001, at least if you also see the requirements from the corporation as a consequence of customer requirements. One of the reasons for this being an important driving force for companies in developing countries is because the regulating system is often deficient and the local environmental concern is generally low. Without resources for environmental management, the priority of environmental issues is quite low, and it is generally not until the company faces international demands that an environmental management system is implemented. The competitive advantage is a consequence of both fulfilled requirements and improved image. Without fulfilled requirements the company would lose clients, and with an improved image of the company it is easier to get more and bigger customers.

Lowering the costs is an important factor for most of the companies, but it is generally more of a consequence than a driving force for the EMS. The reality for most of the interviewed companies is that the sales have decreased so much due to the economic crisis of the country that it is impossible to evaluate the cost savings. However, most of the respondents perceive that the costs of implementing the EMS have paid off, or will do so in the future. This is either a consequence of keeping customers that they otherwise would have lost, or a consequence of a more effective resource use, for example less water- and energy use and garbage separation (or both).

The factor of *reducing non-tariff trade* barriers is interesting to discuss, and there are many different views of it. As in the theory described, the implementation of ISO 14001 provides the possibility for companies to "guarantee" an environmentally safe production through a certificate, which makes it easier for the importer to control the production in all stages. This is suggested as a way of reducing trade barriers. The other view of ISO 14001 as an enforcement of trade barriers is presented in the empirical findings and will be discussed in section 5.3 below.

Only one respondent in the study mentions the EMS *requirement of some financial institutions* as a contributing factor for the implementation of ISO 14001. Again this is not the most important factor for the company; it is more of a contributing benefit with the system. This does not mean that the requirement of financial institutions is not a general important driving force. The cases in this study are not, as earlier stated, intended to explain the general situation in Uruguay and developing countries; only the specific cases. The World Bank and WTO (World Trade Organization) are examples of two international organizations promoting the implementation of ISO 14001, through loans and information.

As mentioned in the empirical part of this study, the general environmental interest among the Uruguayan people is small, according to the respondents, making the *pressure from the local population* low in environmental issues. However, media has an important impact on the people and if an environmental disaster would appear, there would be many people protesting. Environmental problems not observed by media are generally not a high priority among the public. But of course environmental disasters, e.g., lead batteries buried in the ground and affecting children playing in poor areas, are devastating for a company's reputation. In this case, the anger and desperation of the people was directed at the Ministry of Environment, since no specific company was held responsible for the disaster. Generally, one can say that, on one hand, the environmental interest of the public in Uruguay is low, making the pressure from local population insignificant. However, on the other hand, there is an advantage for

companies' having an EMS, since environmental disasters can be avoided, and thereby the reputation of the company could be saved.

The same example concerning lead batteries could be used to describe how media and journalists can cooperate with the government in detecting environmental aspects within the EMS of Uruguay. Instead of defending the fact that there is a very serious problem in the country about children getting contaminated from lead, the government can use this as a way to improve regulation and prevent further contamination. The work of the journalists enables an "input" for the EMS to be provided, indicating an "environmental aspect" and providing an "output" for developing improved regulation.

The pressure exerted by national NGOs is not very big, but the international ones have more impact on the companies. A problem about international NGOs demanding environmental concern from their own perspective is presented by one of the respondents: People from a North American NGO were upset about rice farmers in Uruguay shooting geese attacking the harvest. The rice farmers suddenly faced the pressure to stop shooting the geese and got very annoyed about this requirement, since their only way of earning their living is to produce rice. Without shooting the geese there is no possibility of cultivating rice. In this perspective, what is "sustainable development"? Rice farmers might lose their income, but the geese are saved, or millions of geese are shot, but the economy of the farmers is saved. In the term "sustainable development" (see definition in section 1.6) the factor of economic development is as important as environmental concern. It is not always possible to achieve one of the goals, without compromising the others.

As mentioned earlier, *complying with the law* is not a difficult task for Uruguayan companies. There are not many environmental areas mentioned in the law, and the few that exist are neither very well controlled, nor very strict. This has resulted in companies being able to start their business without any environmental consideration. The regulation is generally not a driving force for the companies in implementing an EMS. Perhaps, viewed in the long run, implementing an EMS as a prevention for future laws, could be a driving force, but none of the respondents mentioned it as an important factor. However, environmental regulation is improving a lot these days, with the implementation of the governmental EMS (see section 4.1.3).

A summary of the case companies' most important driving forces for implementing an EMS is provided in figure 5. The size of the rectangle shows the importance of the factors. The bigger the rectangle, the more important is the factor. Generally the international "side" of each factor is of more importance than the national. An exception from this could possibly be the "society" rectangle if the new EMS of Uruguay manages to spread the environmental commitment in society.

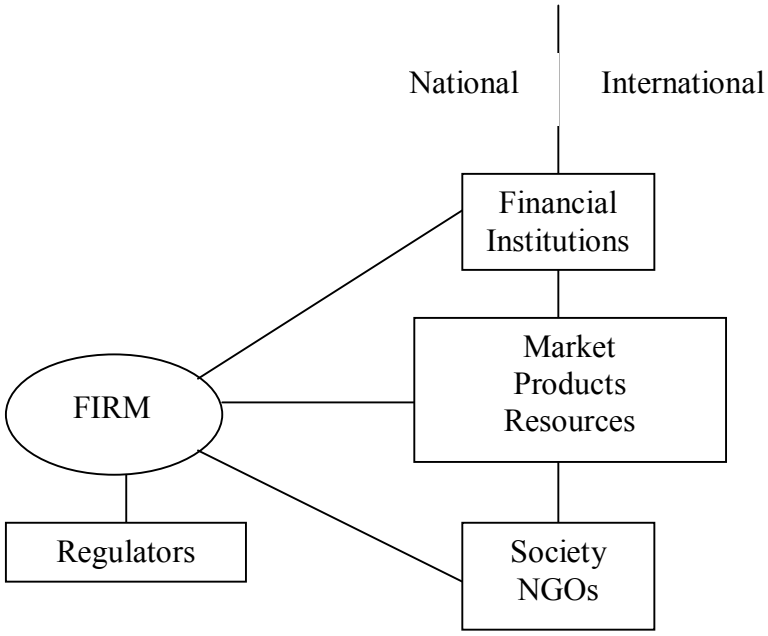

Figure 5: The most important driving forces for the case companies' implementation of ISO 14001. (Own version of image 2 in section 3.1) The most important driving forces for the case companies today derive from the market, products and resources.

5.2 Benefits from implementation of ISO 14001

In this section the most important benefits of the case companies' implementation of the EMS will be discussed.

All of the preventive activities presented in the theory, contributing to *less environmental impac*t (see section 3.3), are confirmed by the measures taken by the case companies. The number after each activity shows how many of the four case companies that have taken these measures as a consequence of the EMS:

- improved routines for effluents to air and water (4)
- environmental demands in new investments (2)
- recycling (4)
- minimization of resource use (4)
- substitution to less environmentally hazardous chemicals (4)

The improved environmental impact has given the following advantages for the companies:

- green image of the company that gives a competitive advantage in the long run
- cost reduction
- safer environment for the employee
- better preparation for coming future regulation

According to the guidance standard of ISO 14001, the EMS creates *confidence among the stakeholders*. The factors below, mentioned in the theory, are confirmed by the companies in the case studies.

- The company has committed to follow the demands in their policy and their environmental objectives
- The environmental work focuses on prevention
- The compliance with laws and other regulations can be proved
- The EMS includes continuous improvement

The improved relation with the different stakeholders in society gives the company the following advantages:

- keeping customers that they would have lost without having the EMS
- other commercial benefits, with an improved marketing possibility
- having an EMS makes it easier to get loans

Financial incentives make companies more interested and concerned about environmental issues. If they can reach a competitive advantage and lowered costs by showing environmental concern, for example through adopting an EMS, a proactive role in environmental management would be *beneficial both for companies and for the public sector*. This makes it easier for controlling governmental bodies to check and correct the environmental management of the companies.

This benefit is confirmed by Aramis Latchinian, the director of the Ministry of Environment. But, unfortunately, the financial incentives are not very strong today in Uruguay. The work with the national EMS will hopefully contribute to an improvement.

5.3 Problems with ISO 14001

For many companies in the case studies the major problem perceived with the system ISO 14001 is related to the high c*ost of implementation.* The problem of high implementation costs of ISO 14001, also treated in the theory, is one of the biggest for companies in developing countries. The economic crisis that Uruguay faces today is the most serious in the country's history, and it is very difficult for any company at all to survive, with or without an EMS. In some cases where an EMS is required by foreign importers, small companies without resources for environmental management can not be sustained if losing this client. In other cases, the EMS is already implemented, but the cost of maintaining it could be very high for a company in crisis, as seen in the empirical part of this study.

When it comes to the government and its role in company implementation of ISO 14001, there are different views. Most of the respondents in the case studies claim that they did not meet any governmental support at all in the implementation of ISO 14001. At the same time there seems to exist a kind of hope of getting governmental assistance in their work with ISO 14000. Most of the respondents claim that, unfortunately, no help is provided but that it would be very much needed.

Since the EMS of Uruguay is very new, most of the companies did not even know that the government was working towards these issues even on a national level. Now the Ministry of Environment is working towards getting better communication with the companies. According to the national Director of Environment, Aramis Latchinian, the only way for a governmental institution to support companies in the area of ISO 14000 is to provide the same vocabulary and the same system on a national level and, of course, to provide a legal framework for the companies to base their environmental work upon. Since the certification of ISO 14001 provides financial benefits, the system cannot be promoted directly by the government.

The costs of implementation and maintenance of the EMS give rise to the possible view of the requirements of ISO 14001 as an unfair barrier in trade with companies without resources for implementing it. At the same time there are so many barriers for developing countries in trade, that this is only one of them, and not the biggest one. Still, it is important to consider the perspective of the observer. At the same time as an observer in an industrialized country can see the advantage of a global environmental concern, benefiting both society and the environment, there is also the perspective of a viewer in a developing country, seeing their company almost collapse because of the lack of resources. With this latter view the requirement of having an EMS could in the short run imply the use of more resources than the company could sustain. For a company in an industrialized country, it is easy in this case to change provider, but for the same provider this lost of client could mean the final reduction of sales, making the company bankrupt. In a perspective of sustainable development this question is important to discuss, since stated earlier, the term implies that the economic development is as important as the environmental concern. Resources from industrialized countries are in many cases needed when an EMS is required.

A possible solution to the high costs of the EMS implementation, especially for small and medium sized companies, is the group certification. The director of the environmental ministry gives the example of bakeries, which are often small and family owned. After some problems with flour contamination, there is a demand for environmental certification of bakeries. However, the resources are very limited in this business. But since there are so many bakeries (almost one in every corner) the possibility of working together in this issue would benefit both companies and customers. The ministry is now working with the issue of group certification.

One problem, not mentioned in the theory, but very important for most of the respondents is the *deficient environmental regulation in Uruguay*. In many cases the companies solicit a stricter and improved regulation. This would both facilitate for and encourage the managers in the environmental management.

An example where a more strict regulation would have been encouraging is the case of a Swiss pharmaceutical company wanting to open in Uruguay. The government calculated many benefits of having this company in the coastal zone, where it wanted to build a

pharmaceutical industry. The problem was that one of the few laws about chemical effluents stated that no chemical waste could be transported to Uruguay. Since the coastal zone is a tax free zone, which does not fall under Uruguayan regulation, the effluents of the company could not be transported for treatment to any part of the rest of Uruguay, because of this law. This problem with the regulation finally made the company invest in another country. "As long as there are no clear rules, it is impossible to give play rules for the companies and we keep on losing investments" (pers. comm, Latchinian, 2003). This is now changing, and hopefully, thanks to the EMS of Uruguay, a new improved environmental regulation is evolving, benefiting both companies and the whole country.

Another problem with the international standard is the *control*. This is not directly a problem on company level, but in the long run the certificate will lose its commercial benefits, if it is not trustworthy. This problem is presented by the director of UNIT, Pablo Benia, who in all other aspects is positive about ISO 14001 as an EMS. The problem about the control is obvious since ISO 14000 is an international standard. It is difficult to have an international standard guaranteeing the same control and demands in all countries. The problem when it comes to the audits in developing countries is that governmental control is often weak. Another problem is that the countries often do not have their own national certification agencies, and in that way they have to hire international certifying organizations. These auditors know that demands are not the same in a developing country and they sometimes give the certificate without demanding the same as in a developed country, where the control is stricter. This, unfortunately, is the reality today, according to Pablo Benía, who blames the international certification organizations for this "commercial game" When some companies get the certificate more easily than other companies, the certification organizations get more "popular", which gives rise to a problem impossible to avoid as long as commercial interests are in the "game".

The case companies also confirm the problem of documentation, but it is generally not seen as an important problem and only one respondent mentions that some employees are not motivated to do the documentation. The fair distribution of the environmental documentation is a difficult task for this respondent, who at the same time points out that there are also many very motivated persons among the employees.

The problem mentioned in the theory, about stakeholders losing the confidence of the certificate since there is *no environmental performance level* stated in the requirements of ISO 14001, is not confirmed by my case studies. All the respondents claim that the audits are very strict, and the continuous improvement is always checked. In this way it is impossible to hide a non-conformable environmental performance within the system.

The possibility of "hiding" environmental improvements in order to comply with the requirements of continuous improvements is not confirmed by the case studies. "When not following the system in the right way, the only one losing is the company itself", says one respondent. This point of view seems to be shared by most of the other respondents.

5.4 DEVCO

The International Organization of Standardization (ISO) is aware of the problem of resources for developing countries in implementing an EMS. ISO has, as described in the theory, an

international committee on developing country matters (DEVCO) that was created to help developing countries to take part in the development of International Standards.

DEVCO organizes seminars and courses for environmental managers in developing countries, financed by sponsors and ISO itself. For example, a seminar organized by UNIT, in order to educate national auditors, was sponsored by DEVCO. Another seminar about Life Cycle Assessment (LCA), partly sponsored by Gothenburg University (Chalmers) in Sweden was also partly financed by DEVCO.

5.5 The concept of CSR in Uruguay

When it comes to the integration of environmental and social aspects, only one of the four companies in the case study, Portones Shopping, has made any real enforcement in the concept of CSR (Corporate Social Responsibility). Portones Shopping supports environmental and social projects around Montevideo and they also have a project where school children can visit the Shopping centre and get educated in environmental issues.

Few of the other companies know about CSR. They face environmental demands, but no demands on social and ethical aspects. Proyecto Deres is, as earlier stated, trying to spread the concept of CSR in Uruguay, and give companies knowledge about the importance and the possibilities with integrating these aspects in the organization.

An interesting thing to investigate would be how much Uruguayan companies in general know about Proyecto Deres. The empirical part of this study shows that few of the interviewed companies know about Deres. One of the reasons could be that the project is quite new. Another reason could be that some of the companies in the case study are not so integrated into the concept of CSR, but more focused on only the environmental part.

5.6 Summary

To summarize the discussion, the most important reasons for the companies in this case study to implement an EMS are:

- The requirements of foreign importing companies
- Corporate advantages and the desire to have a green image of the company
- Other financial benefits, for example cost reduction

The most important problems and possibilities existing in the case companies concerning ISO 14001 are summarized as follows:

Problems: The implementation of an EMS is a process with a lot of paper work. It is a long process, which requires considerable expense. Many companies do not perceive that this is an investment; this is something they usually discover at a later date.

Possibilities: The possibility of improving the relations with the stakeholders through having an EMS is perceived as the major benefit by most of the companies. The industrial sector, with a lot of foreign trade, has met the international requirement of having an EMS and many of them perceive the implementation of ISO 14001 as essential to stay in the market. Another benefit is the competitive advantage of the company and sometimes the reduced costs.

Finally, I personally believe that a big possibility for the environmental management in Uruguay is the new EMS on the national level. With a motivated and involved environmental director, the implementation of a national EMS could be a way of supporting companies in their environmental management, when the help offered by DEVCO, the World Bank and other international institutions has problems reaching the companies, especially the small ones. Although financial loans are given by the World Bank to companies having an EMS, they first must have the resources to implement one. If this national EMS, the first one in the world on a country level, is able to promote and facilitate for companies implementing an EMS (with forums of information about, for example, group certification, etc), the possibilities of sustainable development on both company and country level would increase. This would decrease the international dependence that financial institutions and other international aid often gives rise to.

I strongly believe that the people I have met in the case companies in this study are the kind of people, who are going to contribute to Uruguayan society becoming eventually more environmentally concerned, and I think that countries such as Sweden and many other European countries have a lot to learn on how to create this concern without abundant resources. The EMS of Uruguay, being the only national one in the world, clearly shows how inspiration and creativeness do not necessarily have to do with resources, and I believe Sweden could learn a lot from this country, especially in how to improve the environmental management on a national level.

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Appendix 1: INTERVIEW GUIDE

1. **About the company**

What is the company producing?

When did the company start operating in Uruguay?

How many employees do you have?

With which countries do you trade?

Please list your major clients!

Please list your major distributors!

2. **Please list the reasons why you started the work with ISO 14001?**

How important were these factors?

a. client requirements
b. environmental concern
c. benefits from systematization of the environmental work
d. cost reasons

Are there any other reasons that might have motivated you in your environmental work?

3. **How did you proceed in the certification work?**

In which year did you certify?

How many audits have you had (internal and external)?

4. **What have you achieved so far?**

Environmental objectives

Environmental policy

Environmental aspects

Environmental reports

What kind of preventive activities do you have?

5. **Where are you heading in a time perspective of ten years?**

6. **Which persons within your organization are responsible for the environmental work?**

7. **Have you had any response from your clients after the implementation of ISO 14001?**

8. **Have there been any changes in the costs after the implementation?**

9. **Do you perceive that you have reached a competitive advantage by having an EMS, compared with other companies?**

In which way?

10. **Do you have a more effective resource use now than before?**

11. **Are you using ISO 14001 in your marketing strategies?**

12. **Have the costs of implementing ISO 14001 paid off?**

If not, when do you expect it to have occurred?

13. **How do you perceive the ISO 14001 system?**

What could be done to improve the system?

14. **How do the employees perceive the system?**

15. **Do you think the implementation of ISO 14001 contributes to a sustainable development?**