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THE IMPLEMENTATION OF THE IPPC DIRECTIVE TO SMEs IN TEXTILE INDUSTRY IN TURKEY

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It has finished and now I can take a deep breath, really deep! I have gained great experience from my first thesis work in terms of knowledge I acquired, new people I met, and new institutions and countries where I have been, therefore I will always remember this process mostly with nice memories.

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ABSTRACT

The Commission's Directive 96/61/EC on Integrated Pollution Prevention and Control (IPPC) is the most important initiative of European Commission with an objective to "protection the environment as a whole" based on the integrated permitting system.

The implementation of the IPPC through the European Union is at very early stage and it has been varying through the Members. Among the sectors covered by the Directive, textile sector mostly dominated by SMEs requires particular attention and support. Considerable challenge exists for the sector in terms of implementation, enforcement, monitoring, and compliance of the Directive due to unique features of SMEs.

As a candidate country in Turkey the transposition process of the IPPC into the national legislation is also in very early stage. SME-dominant textile industry in Turkey faces challenges not only because of general problems but also because of unstable economic condition in the country and low awareness to environmental issues. Therefore, there are not environmental activities, which are widespread, are aiming at minimizing adverse environmental effects of SMEs' activities. Nevertheless, this attitude has been changing and initiatives to protect environment have been getting impetus in line with the EU membership process.

However this situation is still the major threat for an effective and efficient implementation of the IPPC on textile SMEs that is under the scope. The future problems which might be appear during implementation of the IPPC in Turkey is analyzed in this thesis under the topics; general challenges because of improper segments of the Directive also experienced by other member states, challenges emerged owing to failures in environmental policy and legal development, administrative capacity, licensing procedure, enforcement and monitoring in Turkey, and sector specific challenges mostly because of SME- oriented feature of textile industry.

In line with the investigation of the possible challenges and opportunities, the policy analysis is done by seeking the answers of the questions to find out if the IPPC will be applicable for the Turkish textile sector consisting medium, small and micro sized installations which are under the scope of the Directive because of high production rate despite their small scale. Moreover If there is a need for adjustments to the IPPC at national level regarding the threshold values and other related issues for Turkish textile sector and some recommendations are given to facilitate a more effective and efficient implementation of the IPPC in general as well as specific to the sector.

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Abbreviations and Acronyms

BAT	Best Available Techniques
BREF	BAT Reference Documents
REC	Regional Environmental Center
CS	Candidate States
EIA	Environmental Impact Assessment
ELVs	Emission Limit Values
EPER	European Pollutant
EU	European Union
IPPC	Integrated Pollution Prevention and Control
MoEF	Ministry of Environment and Forestry
MoH	Ministry of Health
MS	Member States
REC	Regional Environmental Centre
TUSIAD	Turkish Industrials' and Businessmen's Association
TTTSD	Turkish Textile Dyeing and Finishing Industrialists Association

1. INTRODUCTION

There has been a considerable effort through the years to establish a legal framework that ensures a high level of environmental protection in Europe. In the last decades, EU has developed several hundreds of environmental laws, covering most areas of environmental policymaking. Although we have observed considerable progress in terms of environmental performance, the implementation of environmental laws is still a major problem. There is still considerable lack of implementation among the MS and the Candidate States (CS).

The Directive on Integrated Pollution Prevention and Control (IPPC) was adopted by the European Commission (EC) in 1996 with an objective "to achieve a high level of protection for the environment as a whole" (Council Directive, 96/61/EC, Article-1). It requires every Member State to have an integrated permitting system, which considers the overall environmental performance of an installation. The permits oblige that emission limit values (ELVs) based on Best Available Techniques (BAT) are set for each installation, although the directive do not set harmonized ELV standards as some flexibility is granted to the permitting authorities to take into account issues as the quality of the local environment and economic considerations. The deadline for compliance with the Directive is 2007; however, progress goes slowly and there is considerable differentiation in member states' implementation. Therefore, it is too early to evaluate the environmental, economic, and social consequences of the implementation of the IPPC Directive throughout Europe (European Commission, 2003a). In fact, most European countries have had a permitting system in place long before IPPC was introduced. For instance, in the UK first initiative regarding integrated permitting was the Integrated Pollution Control (IPC) that came into force in 1990. Afterwards in 2000 the Pollution Prevention and Control (PPC), which replaced the IPC, is line with the IPPC Directive (DEFRA, 2000). The IPPC directive is however very important as it sets minimum requirements for permitting, and it is especially important, as it will be the model for setting up permitting regimes in the new EU member sates and the candidate countries.

Another significant issue is considerable variation in environmental compliance of the Member States not only in case of IPPC but also in case of other Community's policy areas. The objective of uniform and high level of environmental protection foreseen by the EU environmental policy has not been achieved yet, because of the several political, economic, and social factors (Knill, Lenschow, 2005). Particularly with the recent enlargement in 2004, the variation in economic, social, and environmental conditions among member states has become more apparent; and different levels of environmental performance of new members have come into sight (Pellegrini, Gerlagh, 2005, pg. 2). For the case of industrial pollution, the performance of the new members may be lower than the old ones due to limited administrative capacity, lack of legal framework, insufficient monitoring, and enforcement (Homeyer, 2002). On the other hand, the enlargement of the EU also may be the potential opportunity "to intensify reform efforts already under the way to reduce the implementation deficit and increase the effectiveness and legitimacy of EU environmental policy" (Homeyer, 2002, pg.293)

In the case of Turkey, environmental degradation has become appear during 1990s due to rapid economic growth accompanied with high population growth and rising activities in industry, energy, tourism, and transport (OECD, 1999). Currently, Turkey has to struggle with serious environmental problems with respect to water pollution, air pollution, solid waste management, deforestation, biodiversity, etc. Industrial-sourced pollution contributes considerably to overall pollution. In order to minimize industry-sourced environmental pollution, many pieces of regulation have come into force within the national environmental policy. However, the desired objectives have not been achieved so far because of medium-specific approach, lack of administrative structure for sufficient enforcement,

monitoring, and inspection practices to ensure the high level of compliance. In recent years, the reforms in the area of environmental policy have gained clear momentum with the motivation of the EU membership. According to the EC Regular Report 2004 on Turkey, some progress has been recorded in terms of the harmonization of national legislation with the EU's acquis communautaire[1]. However, "further efforts are needed with regard to transposition and implementation, particularly in the areas of horizontal legislation, air quality, waste management, water quality, nature protection, industrial pollution and risk management" (European Commission, 2004, pg.135).
It is clear from the statement that industrial pollution is one of the main issues to be coped with during the accession process. Hence, Turkey has to transpose the IPPC Directive into national legislation either with some amendments to the existing permitting procedure or establishment of entirely new legal system. In this regard, textile industry will be strongly affected by IPPC implementations since it is the largest sector in Turkey and strongly contributes to the pollution problems. Therefore, the overall objective of the thesis is to analyze the possible challenges and opportunities emerged when the IPPC Directive is implemented in SMEs in Turkish textile industry.

1.1. The purpose of the thesis

The IPPC is a considerable step to move away from "medium-specific", "end-of-pipe" solutions to the "integrated" and "pollution prevention" approaches, which are considering the environmental impacts of industrial activities from more comprehensive point of view and use "clean technologies" to minimize the industrial pollution. IPPC is one of the most significant policies of the EC, which are compulsory for the Member as well as Candidate States. In this regard, Turkey with an expectation of the EU membership has to transpose the IPPC principles to her legislation for industrial pollution not only for the sake of the EU membership but also for the sake of environment. Therefore, the purpose of this thesis is to assess the main challenges and opportunities arising from the implementation of the IPPC Directive to SMEs in Turkish textile sector. The reason why the textile sector was selected is that it is the largest industry accompanying with considerable environmental aspect and impacts. In addition, the reason of focusing of SMEs is due to SME dominant activities within the textile industry in Turkey. In this regard, the thesis is structured along the following research questions:

- What is the current situation of environmental governance in Turkey (e.g. Institutional and legal framework, environmental enforcement and monitoring, licensing system)?
- What is the role of SMEs in textile sector and their contribution to environmental degradation in Turkey?
- What is the current environmental performance of textile sector in Turkey?
- Is the IPPC Directive an efficient and effective tool to minimize adverse environmental impacts of textile SMEs in Turkey?
- Is the current environmental infrastructure and administration capacity appropriate for the IPPC implementation in Turkey?
- What are the barriers and success drivers in implementation of the IPPC in Turkey, especially in the textile sector?
- What would be the strategies, tools, and policy instruments to promote implementation the IPPC and gain intended outcomes?

[1] Acquis communautaire "is the accumulated body of the European Law, which has to be accepted by the EU Member States as a prerequisite for accession" (Fatta, Marneri, et all, 2004, pg. 32)

1.2. Methodology

The investigation of answers to research questions was performed through the relevant literature review, formal documentation on the websites of the European Commission, ministries, and national and international institutions. In addition, unpublished documents were obtained from interviewees, especially for the cases of Turkey.
A number of semi-structured interviews were conducted with the experts in the areas of EU policies, Turkish environmental governance, and the textile sector, either face to face or via telephone. The selection of the interviewees based on their relation with the issues investigated, such as those participated in the capacity-building project for the IPPC implementation and have a position at the institutions that is active in textile industry or in environmental field in Turkey. The thesis research was performed in three phases as it is illustrated in detail on the table below:

Phase	Activities	Outcomes
Literature Review	Comprehensive literature review about; *the IPPC *textile industry and SMEs *Turkish environmental policy, administration structure, enforcement, and licensing procedure	*Identification of research questions * Identification of the questions of semi-structured interviews and interviewees
Collection of main data	Semi-structured interviews with 13 people from *governmental institutions (MoEF, municipalities) (3) *institutions active in environmental issues (4) *textile industry and associations (4) *Academia (2 professors) Literature review (documents gained from interviewees)	*Knowledge on the related issues and empirical data *More structured framework for analysis
Analysis	*In-depth analysis of gained knowledge and data Finalizing thesis based on the findings	*Conclusion of the thesis and Recommendations

Table-1: The phases, activities, and outcomes of the thesis study

The criteria for the analysis of possible barriers and derivers in terms of the current administrative structure and textile industry; and negative and positive outcomes which are likely to emerge during implementation of IPPC was determined in accordance with the finding of literature review and interviews. Several questions were answered with respect to following aspects; relevance of IPPC with the overall problem; its effectiveness and efficiency based on the current implementation practices in the MS and predictions for the case of Turkey; possible positive and negative effects when it is

implemented in Turkey, the issues on adoption, implementation and monitoring of the IPPC at the EU level as well as at national level.

1.3. Limitations

A number of limitations were experienced through the research study. The most significant reason is that the implementation of the IPPC Directive is in relatively early stage in the EU; and in Turkey there is not comprehensive and concrete action plan associated with clear timelines, financial and human resources devoted to the transposition of IPPC into the national legislation, its implementation and enforcement at future. The interviewees could not provide information and data based on the studies conducted about the IPPC Directive and its likely effects on Turkish industry. Therefore, some of the information, which was gained through the interviews, founded on the predictions of the experts in the light of the current situation. Another limitation is the lack of environmental inventory for Turkish SMEs and textile sector about their environmental performance, thus some data was gathered during the interviews with the experts.

1.4. Structure of the Thesis

Throughout the research study, in the light of the analysis of the gathered information it was realized that possible barriers in terms of environmental legislative and administrative systems to the IPPC Directive implementation in SMEs in textile sector are also valid for the other industrial activities that are likely to be under the scope. On the other hand, there are some factors, which are specific to SMEs and textile sector are mentioned within this thesis. In this regard, the thesis comprises of eight chapters. In Chapter 1 the introduction to the topic, the purpose of the research, methodology used, and limitations have been mentioned. In Chapter 2, the IPPC Directive has been analyzed with respect to its three core principles, scope, the MS's progress to date, and some challenges and opportunities emerging during the transposition and implementation stages of the Directive. Following this, in Chapter 3 the SMEs have been presented from general point of view, such as their strengths and weaknesses, environmental management in SMEs, etc. Afterwards SMEs in Turkey has been examined with respect to the barriers, their strengths, initiatives to promote SME activities, and environmental issues in Chapter 4. Then in Chapter 5 the general picture of textile industry at international and national level has been demonstrated. In Chapter 6 the relation between the EU and Turkey, the EU environmental policy, variation in the implementation practices through the MS and benefits of the implementation of the EU environmental legislation have been examined. Moreover, the current environmental legislation and administrative structure, and licensing system in Turkey have been analyzed in the same chapter. In the light of the findings through the previous chapters, in Chapter 7 the analysis of implementation of the IPPC Directive has been carried out within the framework structured by the key questions. At the end, in Chapter 8, the conclusions from the research study and recommendations to facilitate transposition, implementation, and enforcement of the IPPC Directive has been presented in order to achieve intended objectives.

2. THE DIRECTIVE ON INTEGRATED POLLUTION PREVENTION AND CONTROL (IPPC)

The EC adopted the IPPC Directive in 1996 with an objective stated in the article-1 as *"*to achieve integrated prevention and control of pollution in order to secure a high level of protection of the environment taken as a whole" (Council Directive, 96/61/EC). The instrument selected to prevent or reduce the industry-sourced pollution is the integrated operating permit that is obligatory for all installations under the scope of the Directive. Permit conditions should be based on the consideration of BAT levels, and ideally promote environmental friendly techniques to prevent and control the pollution at source rather than end-of-pipe treatment techniques (O'Malley, 1999, pg.78). The IPPC Directive is based on three core principles, which are integrated permitting considering all environmental impacts of any industrial activity, implementation of Best Available Techniques (BAT) in permitted installations, and flexibility and greater responsibility provided to the MS.

2.1. Integrated Approach

The IPPC Directive bases on integrated approach that is taking into account all environmental aspects and impacts of an industrial activity from a holistic point of view. This is aiming at reduction of cross media impacts through the implementation of uniform and single permitting system for all three mediums (air, water, and land) (Ganzleben, 2002).

It is apparent that "integrated approach" introduced by IPPC is a new concept in the EU where there is a medium-specific approach within the European Environmental Legislation. To be more precise, there are several medium- specific directives on water and air pollution, hazardous and solid waste, noise management, nature protection, and nuclear safety to minimize or eliminate environmental pollution. However, several drawbacks of this approach have been observed through the implementation of these regulations. For instance, there is a high possibility of the "shifting of pollution" from regulated medium to less regulated one, and more severe environmental impacts would occur (Faure, Lefevere, 1999, pg. 101). There have been other directives which have some similarities with IPPC but not as comprehensive as IPPC is. For instance, Environmental Impact Assessment Directive (EIA) was introduced in 1985 and amended in 1997 and 2003. Another example is the directive on the major accident hazards of certain industrial activities known as the "Post- Seveso Directive" which came into force in 1982 (European Commission, 2005g; Jans, 1999).

2.2. Best Available Techniques

The IPPC demands taking into account of Best Available Techniques (BAT) in the installation that has been granted by the permit. Each word in the term BAT has unique meaning as it is stated in article-2. "Best" means "most effective in achieving a high general level of protection", "available" is defined as "developed on a scale which allows implementation in industrial sector under economically and technically viable conditions", and "techniques" are "the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned" (Council Directive, 96/61/EC, Article-2). According to article-4, the permitting authorities sets ELVs of the industrial activities mentioned in Annex-I for the pollutants listed in Annex-III. ELVs are determined based on BAT aiming at the use of low-waste technology; the use of less hazardous substances; the furthering of recovery and recycling, resource efficiency. In Annex-IV, twelve considerations are listed in order to assist to the selection of the most appropriate techniques for installations among the BAT. The list consists of the issues such as the consumption and nature of the raw materials, the time required for introduction of any best available technique, and basic operator's duties (Council Directive, 96/61/EC, Article-4, Annex I-III-IV).

While determining the most appropriate BAT for an installation, also the technical characteristics of the installation, its geographical location, and the local environmental conditions have to be considered (Council Directive, 96/61/EC, Article-10). However, there is a considerable variation through the Europe in terms of geographical, environmental, and economic conditions. Therefore, ELVs have showed a discrepancy among the MS. Hence, the Commission brought the obligation of reporting on BAT and national ELVs every three years (Emmott, 1997, pg.36-37). In addition as it is stated in article-10, there might be some cases where more stringent measures required because of higher Environmental quality standards (EQS)[2], additional conditions might be introduced in order to gain the permit (Council Directive, 96/61/EC, Article-10).

The BREFs[3], which are reference documents on BAT, are used to exchange of information and as a guideline for competent authority to set the permit conditions. Moreover, the overview reports of each installation for inventories of emission submitted to the Commission have been also published on the website called the European Pollutant Emission Register (EPER)[4] (European Commission, 2003a). Another initiative to promote information exchange between the MS is IMPEL which is an informal network of authorities of the MS having responsibility to implement and enforce the IPPC (European Commission, 2003a).

2.3. Flexibility and responsibility provided to the MS

The principle of "subsidiarity" in the Directive is providing the flexibility and greater responsibility to the MS to decide upon the implementation mechanisms and practices of the directive at domestic level as far as the required objectives are reached. Consequently, there are significant variations in implementation, inspection, consultation, and public participation of the IPPC Directive at national level. For instance, "new" ten MS have updated their legislation with considerable approach change and new legislation whereas "old" fifteen MS have been amending existing legislations. Moreover, while some countries such as the UK and Poland have "a formal national phase-in plan" Spain does not have such a national plan for the submission of permit application. (Brink, Farmer, 2003, pg 3)

2.4. The Scope of the IPPC

Six main industrial activities are covered by the directive, including energy industry, production and processing of metals, mineral industry, chemical industries, waste management sector; and *"other"* including pulp and paper production, pre-treatment of textile, tanning, food production and the intensive farming of poultry and pigs (Council Directive, 96/61/EC, Annex-I). In order to determine scope of the directive for each type of industry; "either their relation to the nature of the process or the product (e.g. refining of oil) or the size of the operation (e.g. production of ferrous metal above 20 tonnes per day)" are taken into account (Brink, Farmer, 2003, pg.1).

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[2] EQS are legal environmental standards and defined in the Directive as "the set of requirements which must be fulfilled at a given time by a given environment or particular part thereof, as set out in Community legislation" (Council Directive, 96/61/EC, Article-2).

[3] For more information, see http://eippcb.jrc.es

[4] For more information, see website; http://www.eper.cec.eu.int/eper/default.asp

The IPPC Directive has more comprehensive definition of "pollution" than the previous regulations. It is defined as "the direct or indirect introduction as a result of human activity, of substances, vibrations, heat or noise into the air, water or land which may be harmful to human health or the quality of the environment, result in damage to material property, or impair or interfere with amenities and other legitimate uses of the environment"(Council Directive, 96/61/EC, Article-2). This is clear from the definition that the operators and regulators in MS have to consider the impacts of industrial activities from several points of view while applying to issuing the permits as well as during the operation.

The intention of the Directive is to regulate mostly large-scale industries; however, some small and medium sized enterprises (SMEs) also fall into the scope of the IPPC due to low threshold values and characteristics of the sector (O'Malley, 1999, pg. 79). For instance although the threshold value which is 10 tonnes/day for textile treatment is not low, there is a number of SMEs which fall under the scope of IPPC. Moreover, there is a wide variation in numbers in different countries. The number of installations requiring integrated permits is 50,000 in the EU; in Germany, the UK, and Italy the number is 7,705, 6,495, and 10,000 respectively; on the other hand in Malta, Luxemburg, and Hungary there are 20, 30, and 900 respectively (Brink, Farmer, 2003, pg. 2).

2.5. Amendments to the IPPC Directive

The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters which came to force in 1998 have raised the attention on the significance public participation in environmental decision-making mechanism (European Commission, 2005f). Therefore, in order to "to enable the Community to ratify the Aarhus Convention" (European Commission, 2003a, pg.19) the provision of IPPC on the public access to information and participation in the permit procedure was amended in 2003. Another amendment was about the EU greenhouse gas emissions; that is the Directive 2003/87/EC on "establishment of a scheme for greenhouse gas emission allowance within the Community" (SEPA, 2005).

2.6. Progress in implementation of the IPPC Directive

According to the Commission's communication report "the implementation of the Directive in the EU is still in its early stage" (European Commission, 2003a, pg.7). A transition period for new installations and existing installation with significant modification in MS was until October 1999. For fully compliance of existing installations, deadline is until October 2007 (European Commission, 2003a). However, the date "October 1999" was for fifteen "old" MS to comply with the directive; the other ten "new" MS have the transition period until October 2007 to adjust existing installations completely to the Directive (European Commission, 2005h).

However, some "new" MS and acceding countries have longer transition period until 2012 including Latvia, Slovakia, Slovenia, Poland, Romania, and Bulgaria for some installations (Brink, Farmer, 2003, pg.1). The fact is that "old" MS were not successful in completing harmonization of the directive to their national legislation by 1999 (European Commission, 2005h). At present, there is still lack of compliance with national legislations in some issues among the EU-15. Even there is "infringement cases" in "Belgium, Denmark, France, Germany, Greece, the Netherlands, Luxemburg, and Spain" (European Commission, 2005e, pg.3).

Therefore, there is widespread concern on the implementation of IPPC across the MS. The concern of the Commission is declared by the environment commissioner Stavros Dimas as follows: "Nine years after the adoption of this major piece of legislation and two years before the deadline for its full application, many installations do not yet comply with the conditions set out. This may cause significant environmental damage…the Member States clearly have to make stronger efforts to issue

the necessary permits" (European Commission, 2005d). This disappointing situation is also apparent in the statistics, which are laid down in the Commission's first implementation report on the IPPC focused on between the years 2000 to 2002 and EU-15. There are 45,000 installations under the scope through the Europe; and the IPPC permits were issued to 4750 installations where "substantial changes" occurred and to 795 new installations, in total 5545, which accounts for 13% of all installations. Nevertheless, these are not exact number for the current situation since it does not include data after 2002 (European Commission, 2005e). In addition, there is not an accurate statistics regarding the "remaining existing installations" to be granted before 2007. Hence there is a concern of "a disproportionate number of permit applications" and their "filing immediately prior to deadline" among the policy-makers (Environment Daily, 2005).

Therefore, there have been two initiatives to promote the transposition and implementation of the IPPC across the MS. One of them is "IPPC Implementation Action Plan" consisting of "the development of guidance documents, monitoring of the number of permits issued and compliance check of installations with high emissions" (European Commission, 2005d). Another action is the initiating of "IPPC Review Process" which has the activities as "assessment of the ways to streamline existing legislation on industrial emissions, clarifying certain legal and technical issues, and assessment of market-based instruments to strengthen the implementation of the Directive and to promote innovation" (European Commission, 2005d).

2.7. Challenges and opportunities of the IPPC Directive

The IPPC Directive can be considered as a significant step with regard to shifting from a medium-specific approach in EU environmental legislation to an integrated approach considering all environmental aspects and impacts of an industrial activity. However, like all other directives, it will take time to attain desired level of implementation and several problems have been encountered during the transposition process. In order to make the transition period shorter and obtain more effective and efficient results; some opportunities and challenges should be analyzed in advance. In the following paragraphs not being too detailed; some opportunities and challenges have come into view in the case of IPPC will be mentioned with a few.

To begin with, the IPPC is based on the integrated approach which is taking into account several environmental impacts and aspects of a wide range of industrial activities. The main idea is to avoid end-of-pipe applications and stimulate more innovative and cleaner techniques to prevent pollution at source. Initially, pollution prevention practices, such as elimination, reduction, recovery, and recycling have been implemented, and then if pollutant emissions cannot be avoided the best available end-of-pipe treatment technologies have been used to minimize the adverse effects. The introduction of some contexts including energy and waste minimization, efficient use of raw materials contributes to improvement of efficient business practices. In addition, the implementation of single permitting system for all mediums has led to "harmonization of pollution control across the Europe" and more environmental issues have to be taken into account by national authorities and operators from more comprehensive point of view (O'Malley, 1999, pg.78). Moreover, application of BAT in BREFs may be a significant step "to improve the consistency of permit conditions at the European Level" (Brink, Farmer, 2003, pg. 4). In addition, a great deal of knowledge in BREFs may provide considerable assistance to the installations aiming at improving their environmental performance.

On the other hand, some challenges have come into sight during the transposition and implementation processes of the IPPC among the MS. For instance, some definitions of the main terms are unclear and it leads to contradiction in implementation. For instance, threshold values for some cases are

considered as not high enough to address the main environmental impacts, and identification of the installations under the scope is not straightforward for some cases. In addition, there is emerging need for explanation of same statements regarding "installation", "substantial change" and issues related to monitoring and inspection (Brink, Farmer, 2003, Pg.8-9).

In addition, it is not easy to determine which technique is the most appropriate to any specific industrial installation in the light of selection criteria stated in Annex-IV. For instance, for textile and cement industries "assessment and selection of BAT seems not based on precise indicators or criteria derived from the IPPC but rather on wider criteria which are the industrial feasibility of the technique" (Laforest, Bertheas, 2004, pg.2). According to the study carried out in France to develop a BAT selection methodology of techniques revealed that there are "a great number of redundancies and heterogeneity in the considerations" (Laforest, Bertheas, 2004, pg.7); and this leads to confusion in selection of BAT. Hence, there is a need for the new and more comprehensive definition of the selection criteria (Laforest, Bertheas, 2004). Another issue is that insufficiency of BREFs consisting of BAT in some extent; "lobbying from industry" is one of the reasons, therefore in order to minimize the negative influence of business, regulatory bodies should take their counter actions (IHOBE, 2004, pg.5).

3. SMALL AND MEDIUM SIZED ENTERPRISES (SMEs)

In recent decades, there has been a remarkable change trends in world economy. New notions such as "the new economy, the information society, the learning economy, and knowledge based economy" (Napier, Serger, Hansson, 2004, pg. 12) have been introduced. Among these notions, SMEs still have a key role despite considerable changes among countries' business markets. In fact, in a growing number of developing and developed countries, SMEs have been recognized as a major contemporary source of production, employment, innovation, and income; however still little is known about the characteristics and patterns of change in these enterprises. Furthermore, they have been given importance in many development plans as well as in the strategies of many donors; however, it appears that the problems, which they have to struggle with, have been increasing in most developing countries.

3.1. Definition of SMEs

The definition of SMEs has been changing according to criteria's of organizations; however, the number of employees is most common criteria for SME definition. The common definition is regarded essential by the EC for consistency and effectiveness of measures in favor of SMEs. Therefore, the definition, which has been used since 1996, has been changed considering significant economic changes in business environment. According to the EC, "the new definition is more suited to the different categories of SMEs and takes better account of the various types of relationships between enterprises" (European Commission, 2005i, pg.8). The same values for the number of employees are used in the new definition, however the limit values for annual turnover and annual balance sheet have been increases, for instance new threshold value of annual turnover for medium-sized enterprises is EUR 50 million instead of EUR40 million. The new definition came into force recently, on 1 January 2005, therefore the data and facts will be used and stated in this thesis will be based on previous definition (European Commission, 2005i). The enterprises, which have less than 250 employees, are considered as SME in this thesis.

3.2. Fundamental weaknesses and challenges of SMEs

SMEs are very significant component of most of the countries' economy because of their considerable contribution to the employment, economic growth, and innovation. In many OECD countries, SMEs make up between 96% and 99% of all enterprises and 60-70% of total manufacturing industry. For

instance, in the United States “40% of total economic activity and 52% of private non-farm GDP” (OECD, 2002, pg.7-8) are SME-sourced. The picture is same for the EU; 23 million SMEs account for 99% of all enterprises providing 75 million jobs among 25 member states (European Commission, 2005i). However, they are regarded as more disadvantaged compared to large -scale enterprises because of several reasons. Some general challenges which SMEs are struggling with can be summarized as; lack of financial, technical and human resources, the burden of administrative requirements (regulatory, licensing, and permit), lack of legal framework to support SMEs in severe business environment, and barriers to access to information and technology (IFC, 2004).

Consequently, in spite of their dynamic and entrepreneurial characteristics being competitive in the market against the large-scale enterprises is relatively difficult for them. Therefore, several national and international programmes and policies have been developed to support SMEs and to establish more favorable business environment for their activities. For this purpose, EC is stating “support for SMEs is one of the EC’s priorities for economic growth, job creation, and economic and social cohesion” (European Commission, 2005i, pg.5). There is no doubt that this statement is a clear support for contemporary initiatives, and the future measures to improve the situation of SMEs against large-scale enterprises have been on the way.

In this context, there are several initiatives to promote the SMEs’ activities in national and international business markets. The Lisbon Submit and consequent establishment of European Charter for Small Enterprises is one of the initiatives to attract the attention on SMEs in Europe. There are other examples for the initiatives to support SMEs all around the world. Some of them are the OECD conference on SMEs held in 2000 resulted Bologna Charter and the second conference held in Istanbul in 2004; The International Network for SMEs (INSME), Maribor Declaration in 2003, and Istanbul declaration in 1992 (Napier, Serger, Hansson, 2004).

3.3. SMEs and Environmental Management

Environmental performance of the company, has increasingly gained importance in the business market without considering if it is large or small scale. There is no doubt regarding the significant contribution of SMEs to environmental pollution and resource consumption even though there is no appropraite statistics because of lack of data on emission and waste generation (OECD, 2002). The reasons might vary through the sectors and countries but there are major reasons which are valid almost most of the SMEs. One of them is lack of financial and human resources to be dedicated to environmental management to reach, mobilize and engage in environmental improvements. According to the study carried out by Hillary there are many internal and external barriers due to various features of SMEs. The outcomes of this study are illustrated in the table below. The conclusion of the study is that “internal barriers are more important than external barriers” (Hillary, 1999, pg. 6-8). Therefore initiatives to enhance the capacity of enterprises in terms of technique, finance, human resources and know-how should have the priority in strategies and policies for the promotion of SME activities.

Table-2: Internal and external barriers to implement EMS among SMEs (Hillary, 1999)

	Environmental Issues	EMS Implementation
INTERNAL BARRIERS	**Unawareness of environmental impacts of SMEs** **Scepticism about potential economic and social opportunities of implementation of EMS** **Lack of internalization of environmental concerns to business operations**	**Lack of human resources reinforced as the size of company decreasing** **Interrupted nature of EMS implementation in SMEs** **Lack of knowledge and technical capacity** **Misunderstanding of EMS by SMEs**
EXTERNAL BARRIERS	**Lack of recognition of SMEs environmental performance by customer, especially in case of micro firms**	**Costly certification and verification systems, particularly high cost of ISO 14001 certification and EMS registration** **Insufficient external drivers and consequent uncertainty about benefits** **Lack of sector specific guidance and appropriate material to different sizes of firms**

4. SMEs IN TURKEY

The role of SMEs in Turkish economy is crucial due to their significant contribution to overall employment, income, competition, and development of new technologies and products like any other countries. There is a lack of appropriate statistics to demonstrate and analyze the state of SMEs in Turkey and variation in SME definition across the main organizations, and it is not in line with the EC's definition. The inconsistency in SME definition is also mentioned in the National Programme for the Adoption of the EU Acquis (NPAA) as an "essential issue" having priority (ABGS, 2003, pg. 548). However, a general picture can be visualized with the help of the data mentioned in the OECD report in 2004 for SMEs in Turkey; so that SMEs comprise 99.8 % of total establishment, 77% of total employment, 27% of value added, 38% of capital investment, approximately 10% of exports, and despite the great portion of economic contribution only 5% of bank credit in 2000 in Turkey (OECD, 2004b).

4.1. The barriers to Turkish SMEs

In Turkey, the situation of SMEs is not very different at all in many aspects mentioned before. In addition to general problems which most of SMEs are facing in all countries, Turkish SMEs also have other problems due to unsupportive domestic business environment. For instance, they have "lower work force and turnover and they are lag well behind in terms of know-how, skill levels, capital investment to support their activities, and access and ability to take advantage of modern technologies,

especially in the information and communication fields" (OECD, 2004b, pg.9) compared to those in EU and other OECD countries. The most important reason of this unfavorable situation is unstable economic conditions in Turkey, and it is obvious that this has a great influence on SMEs' current and future activities. The figure below illustrates specific factors hindering SME activities and emerging outcomes from economic point of view in a schematic way. In recent years, dominant "inflationary economic climate and growing debt in public sector" have resulted in high rate of increase in real interest rates, "depreciation of the Turkish Lira, remarkable variation in GDP, a series of financial crises, and especially a lack of confidence" among national as well as international market. Furthermore joining to the Custom Union without required adjustments was a kind of shock for Turkish SMEs, which have had to resist high international competitiveness. These factors have been reinforcing abovementioned weaknesses of SMEs (OECD, 2004b, pg. 9-10).

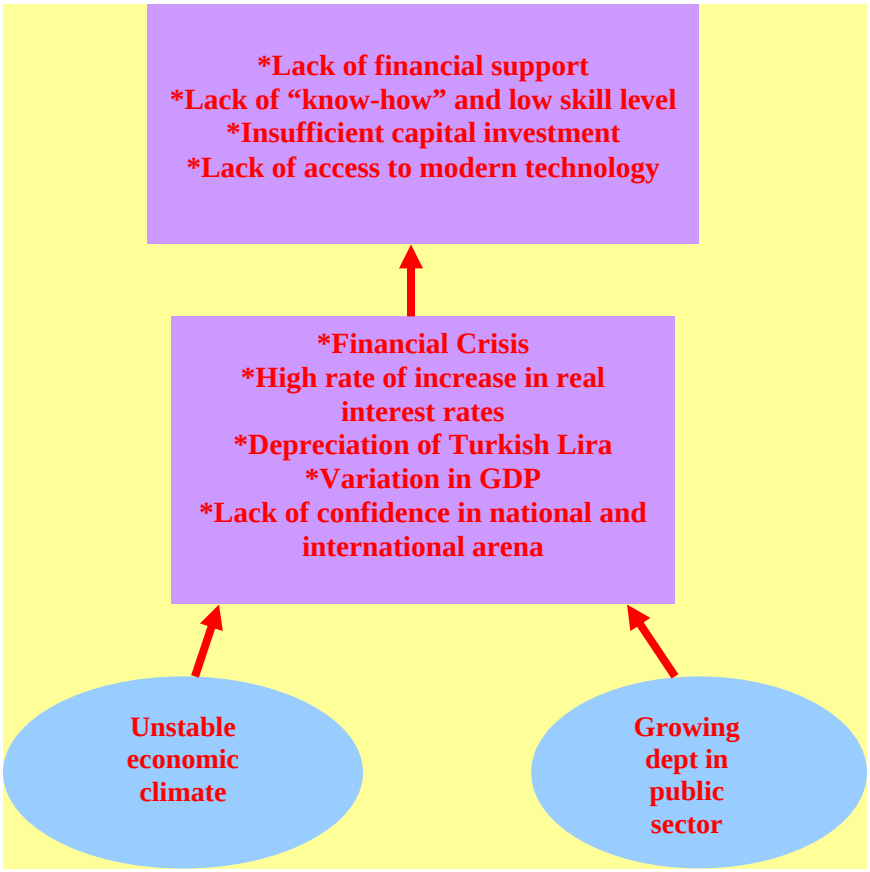

Figure-1: Difficulties SMEs exposed to from the economic point of view (OECD, 2004b)

Furthermore there are some other issues which the EC has paid considerable attention in progress report for Turkey in 2004, which are "administrative burden (registration procedures, costs and amount of documentation); lack of services for SMEs (especially online); high interest rates for bank credits, insufficient functioning of the commercial judiciary" (European Commission, 2004c, pg. 120-122).

4.2. Strengths of Turkish SMEs

Turkish SMEs have been carrying out their activities despite the barriers because of their dynamism, flexibility, and high entrepreneurship. They are like a "bridge" in terms of economic as well as social relations between Turkey and the EU due to their "cross-border activities and networks"(Napier, Serger, Hansson, 2004, pg.57-58). In addition, in the 2001 the EC's regular progress report significant contribution of SMEs to economic stability is mentioned as "this category of enterprises which provides some core stability to the economy…otherwise highly volatile Turkish economy" (European Commission, 2001, pg.59). In this manner, the effective and efficient initiatives have gain great attention to promote Turkish SMEs' activities within national as well as international business market.

4.3. Initiatives to promote SME activities in Turkey

In recent decades, the awareness about the key role of SMEs in Turkish economy has been raising. A number of policies and strategies have been developed to facilitate appropriate business environment for SMEs. At national level, establishment of Small and Medium Industry Development Organization (KOSGEB), SME Strategy and Action Plan (2003), opening of Euro Info Centres (EICs) and the Innovation Relay Centre (IRC), and "e-Transformation Turkey" are some examples for on-going activities (European Commission, 2004c, pg. 122). On the other hand, at international level, Turkey has made a commitment to several international charters and programmes, including the Bologna Charter (2000), European Charter for Small Enterprises (2002), The Business Environment Simplification Taskforce (BEST) Programme (OECD, 2004b)

The improvements in the situation of SMEs in the light of initiatives are also mentioned in the 2004 the EC's 2004 progress report on Turkey, "the improved access to finance for small enterprises…the improved macroeconomic environment is a positive development" (European Commission, 2004c, pg. 121-122). The level of compliance of Turkish SME policy with the EU's is declared as "Turkey's policy towards SMEs is broadly in line with the principles and objectives of EU enterprise policy" (European Commission, 2004c, pg.122). In spite of particular efforts and their recognition by the EU, there are still steps waiting to be taken to provide a proper business environment for Turkish SMEs.

4.4. Turkish SMEs from environmental point of view

Internalization of the environmental concerns into SMEs ongoing business practices is an obligation for Turkish SMEs to be competitive in severe European market conditions. Low level of environmental awareness, lack of financial resources and research departments, and insufficient environment staffs dedicated to environmental management to reach, mobilize and engage in environmental improvements are very limited in Turkey, even a number of enterprises do not have any idea about their environmental impacts. In 2002, a study with in-dept interviews with 31 SME owners or managers located in the Marmara region of Turkey was conducted, with the purpose to inquire management attitudes towards strategic management issues, such as globalization, EU membership, foreign capital inflow, internet and telecommunication technologies, increasing consumer awareness especially in social and environmental issues, and protectionism. According to the results, "most of the managers did not have the necessary sensitivity to understand the importance and implications of environmental issues for their business"; moreover "they do not see any problem with their operations unless a regulatory body warns them or suspend their operation due to violation of environmental codes" (Coskun, Altunisk, 2002, pg 272- 285).

It is clear from results of the study that there is a need for initiatives to raise awareness on environmental concerns and potential opportunities facilitated by the implementation of environmental

activities and technical and financial assistance to promote environmental friendly activities among Turkish SMEs.

4.4.1. Initiatives to promote environmental performance of Turkish SMEs

There are several initiatives all around the world to enhance the environmental performance of SMEs providing technical as well as financial assistance. Some examples are "The efficient Entrepreneur" in Germany, which has been also implemented for Turkish SMEs by the collaboration between Wuppertal Institute and Istanbul Chamber of Industry (ISO), Envirowise Programme in England, and DELTA programme in Switzerland. In Turkey, the programme of DELTA-Eco-efficiency was implemented between 2000-2004 under the auspice of Turkish Chamber of Environmental Engineers aiming at introducing the concepts of pollution prevention, eco-efficiency, and eco-management to Turkish business and related stakeholders, generalizing the practices in these issues among Turkish enterprises with the help of sharing of experience already gained by international organizations. For this purpose, several seminars and training programmes were held in cities with considerable participation of representatives from 114 different institutions including business sector, governmental organizations, and academics from universities, NGOs, environmental engineers, and consultant agencies. Through the training programmes, 14 experts were trained in international courses on the issues of eco-efficiency and environmental management. Regarding SMEs, 21 activities to promote eco-efficiency in the sectors of food, metal, oil, dye, and wood were performed in 19 enterprises; and 15 of them published as a case study. The results were relatively successful with respect to reduction in energy, water, raw material consumption, and waste minimization; and total amount of saving was 1.35 million USD (Yıldız, 2004). This study is important to demonstrate the benefits of implementation of environmental management practices among companies. Therefore, if the number of these kinds of initiatives is increased engagement of Turkish business with environmental issues also will increase.

5. TEXTILE INDUSTRY

Textile industry has a considerable contribution to countries' economies all around the world. It provides tens of millions employments and has a great share in global trade with the value of 5.6% which is worth for USD 350 billion in 2003 (OECD, 2004a). Textile sector also accounts for a considerable portion of industrial activities in the EU. Its contribution to European manufacturing industry is EUR 200 billions as a turnover by around 177,000 enterprises with more than 2 million employees in 2002. In 2004, the number of employment provided by the sector raised to 2.7 million after EU enlargement. Furthermore, 4% and 7% are the share of the sector in total manufacturing value added and in manufacturing employment respectively in the EU-15 (European Commission, 2005b). At international level according to the statistics in 2003, the EU is the world's largest exporter of textile products with a ratio of 15%. Furthermore, the EU is also large market for exporters in the world after the US with 22%; the EU is the second importer of textile and apparel goods with a ratio of 20% according to statistics in 2003 (European Commission, 2005j).

5.1. Textile Industry in Turkey

Turkish textile and apparel industry is the largest industry in Turkey besides being one of the first established industries. In 1950s, the earliest activity began in clothing industry, and until the end of 1970s, it was mostly for domestic consumption because of limited development. After some measures were taken to promote textile industry in 1967, there was noticeable improvement in the sector, particularly after the economic reforms in 1980 enhancing the export oriented economic policies, supporting the import of machinery equipment and auxiliary materials, and stimulating the rational

investments in this sector. As a result of these initiatives, at present Turkish textile industry has high competitive position in the global market (TETSO; KOSGEB).

Considerable contribution of textile and apparel industry to Turkish economy is obvious in recent statistics. For instance, according to data in 2004, the textile and apparel industry represents 10% of GDP, 17.5% of industrial production, approximately 20% of manufacturing labor force, and for the year 2003, its input to total export earnings was 32.2%. In addition, Turkish textile industry is one of the main players in the international textiles trade. It is fourth biggest clothing and tenth supplier of textile commodity in the world based on 2002 global statistics, besides, second clothing and textile commodity supplier in the EU region in 2003. The EU region is the main market for Turkish textile industry with the portion of 63% in total export, at country level while Italy, Germany, and United Kingdom have a major share within industry's export to the EU, 11.6%, 9.2%, and 5.6% respectively. Regarding to the apparel exports Germany, United Kingdom, and France have the portions of 29%, 14.4%, and 7.2% respectively among the other European countries. In the meantime, United States is also an important market for Turkish textile and apparel industry, with 5.5% of textile and 12.9% of apparel share of whole export of both sectors (ITKIB, 2004).

SMEs are dominant in Turkish textile and apparel industry. Statistics indicates that there are 49,000 active SMEs accounting for 23% of total SMEs in manufacturing sector and 2.3 millions of employees. In the sector around 20% of 500 large- scale companies are carrying out technology intensive textile and apparel production in Turkey (Smid, Taskesen, 2002). There are two major manufacturing segments in Turkish textile industry. The one is "spinning and weaving" which is utilizing mainly domestic resources for raw materials with high quality and original designs. Another is "apparel manufacturing sector" which is producing non-branded goods by using domestic as well as imported clothes (SPO, 2004, pg.27).

5.1.1. Strengths and weaknesses of the Turkish textile industry

There are several problems have to be struggled in textile and apparel industry because of several reason. It can be claimed that this is because of the SME dominant characteristics of the sector. Therefore, most of the problems observed in Turkish SMEs are already the problems of Turkish textile and apparel sector. Thus, the discussion of several issues about characteristics of Turkish SMEs is also valid for Turkish textile and apparel sector.

5.1.1.1. Strengths of the sector

- High quality and quantity of raw material provided by domestic suppliers
- Recent investment in new machinery and resultant high technology
- Closeness to EU market
- A number of education institutions (e.g. textile engineering faculties, fashion schools, and high schools) to increase qualified human resources
- High technology in finishing industry
- High technology in sub-industry for clothing sector
- High product diversity
- The Customs Union since 1996 and Free Trade Agreements with many countries

5.1.1.2. Weaknesses of the sector

- Dominant SME which are vulnerable to economic variations
- Lack of financial resources

- Lack of efficient cooperation and coordination between the sub-sectors, associations, and regulators
- Insufficient R&D activities even though there are institutions such as Aegean University Textile and Apparel Research Application Institute, Dokuz Eylül University Textile, Apparel and Dye Research Institute , Tübitak Textile Research Application Institute, and Textile and Ecological Text Research Development Centre (EKOTEKS).
- Requirement of further adaptation to customer needs, quality standards, ISO norms and environmental regulations
- Possible disadvantageous situation because of the removal of quota after 2005 resulted danger of severe competition from low wage countries, especially China (Smid, Taskesen, 2002; SPO, 2004; ITKIB, 2004).

5.2. Turkish textile industry from environmental point of view

There are considerable adverse environmental impacts resulted from the emissions of textile production processes from the moment of the pesticides used during the cultivation to the production of natural fibers to production of apparel and other goods, as well as at packaging and the usage phase (Access Guide, 2005). The textile industry has quite fragmented and complex production system among the processes such as the production of simple fiber, yarn, fabric production for apparel, industrial goods, and home furnishing. Through the various production processes, high amount and various kinds of chemicals, raw materials, energy, and water are used. Consequently, relatively high amount of waste emission to many mediums of environment occurs and the effects are considerably harmful to environment as well as human health from several aspects (Access Guide, 2005).

For the case of Turkey, there is not appropriate data available concerning environmental aspects and impacts of textile industry; however, it is certain that there are vast quantity of water, energy, and resource consumption, especially high water consumption that is 350,000 m^3 / day (Smid, Taskesen, 2002, pg. 19). The official data indicates 1-1.5% share of water consumption within resource inputs; however, there is widespread illegal use of underground water supplied by wells that are constructed by the operators without permits. As an energy source commonly electricity, natural gas, fuel oil, and LPG are used. However, the electricity usage is widespread among textile manufactures despite its much higher cost compared to European countries, and it has a contribution of around 20% to total operation costs (Personal interview, August 2005)

5.3. The IPPC and Textile Industry

The textile industry is under the scope of the IPPC as it is stated in Annex-I “plants for the pre-treatment (operations such as washing, bleaching mercerization) or dyeing of fibres or textile where the treatment capacity exceeds 10 tonnes per day” (Council Directive, 96/61/EC, Annex-I). Therefore textile operators should take into account the obligations stated by the IPPC to attain permits. However, the integrated permitting as the one of the most significant aspects of the IPPC implementation to textile operators is at quite early stage, therefore, there is no inventory data to give an idea about existent situation (Environment Agency, 2004).

There is a variation in implementation of threshold values for textile sector through the MS. For instance, while France is using the threshold value 10 tonnes/day, Italy is taking the average value of 3 years as a threshold value. On the other hand, the Netherlands and Sweden do not apply any limits and all textile installations are under the scope of the IPPC. Therefore, in the case of Turkey it is likely to

make some adjustments in threshold values in accordance with local conditions of Turkey as far as the common environmental protection level has been achieved. However, it is almost no probability to lower the threshold value since it is estimated that almost 90% of the installations within textile sector will be covered based on this value (Personal interview, August 2005).

5.3.1. The Content of BREF for textile industry

The BREF for textile sector is made of 626 pages including supplementary information regarding "textile auxiliaries, dyes and pigments, textile machinery, typical recipes, etc" in many annexes. The activities related to wet processing accompanying with three main sub-sectors as wool scouring, textile finishing (excluding floor covering) and carpet sector have been pointed out in the BREF. To be more specific, although "upstream processes such as synthetic fibre manufacturing, spinning, weaving, knitting, etc " have been mentioned in some extent, considerable attention is paid the "finishing processes" such as pretreatment, dyeing, printing, finishing, coating, washing, and drying (European IPPC Bureau, 2003, pg.3)

There is a wide range of options of BAT in textile BREF; however, some problems have been arising due to unclear statements and very broad ELVs. This issue is also mentioned by Austria in the way of requirement of "improvement in presentation of ELV in the description of BAT during the review of BREF" (European Commission, 2003c). Therefore, it is significant to make required revisions founded on the reflections as outcomes of the MS's experience.

5.3.2. Impacts of the IPPC at Sectoral Level

In the EC's report demonstrating and evaluating the results of questionnaires answered by the EU-15 between 2000 and 2002, the textile industry is considered under the title of "others" so no exact data has been obtained from this report. However in order to have general idea, the case of United Kingdom will be analyzed based on the limited sectoral information. According to the EC's report the numbers of "existing installations", "permits for substantially changed installations", and "permits for new installations" are 2697, 1 and 9 respectively for the installations covered under the title of "other activities" in the UK (European Commission, 2004a, pg. 29). There is not "pollution inventory data" for textile sector in the UK since integrated permitting has been introduced recently" (Environment Agency, 2004, pg.14). In addition, according to application reviews for all sectors there is "a fairly low level of awareness" with regard to "resource efficiency techniques" (Environment Agency, 2004, pg.14). To be more precise, among six permit applications the activities regarding resource efficiency are only "monitoring of water and raw material consumptions and recycling" (Environment Agency, 2004, pg.14). It is expected that the implementation of the IPPC will force installations to take into account wider resource efficiency techniques in order to attain permits to start operation (Environment Agency, 2004, pg.14).

In light of available information, it can be concluded that the implementation of IPPC is at very early stage particularly for textile industry. However, it is also obvious that there will be significant impacts on industries under the scope in terms of "their environmental performance, characteristics of production and management systems" (Pellini, Morris, 2002, pg. 332).

6. THE EUROPEAN UNION AND TURKEY

The first statement of the collaboration between the European Economic Community (EEC) and Turkey is the ratification of the “Ankara Agreement” in 1963, and it came into force on December 1964. In accordance with the objective of the establishment of a Customs Union in three stages, first Financial Protocol was already signed within the Ankara agreement, and the following years in 1970 and 1977 a second and third Financial Protocol were signed respectively.

Turkey applied for full membership in 1987, the answer was given in 1989 as "it would not be useful to open accession negotiations with Turkey straight away" due to both economic and political reasons. Other issues, such as "the negative effects" of the disagreement between Turkey and Greece on Cyprus were also emphasized. Besides these negative statements, it was also stated that “the Community should pursue its cooperation with Turkey, given that country's general opening towards Europe"(Delegation of the EC to Turkey, 2005) and declared its future expectations as "the Community has a fundamental interest in intensifying its relations with Turkey and helping it to complete as soon as possible the process of political and economic modernization" (Delegation of the EC to Turkey, 2005).

Afterwards, in 1996, the Customs Union between the EU and Turkey came into force aiming at establishing “the closest economic and political relationship between the EU and any non-member countries” (Okumus, 2002, pg.21). The meaning of the Customs Union is abolishing “of all duties and equivalent charges on the imports of industrial goods from the EU Member States” (Okumus, 2002, pg.21) and the industrial good imports from third world countries, tariffs, and equivalent charges were brought in line with EU Common External Tariffs (Okumus, 2002). Without a doubt, several economic consequences have come out after the Custom Union, but detailed and comprehensive analysis of them is beyond the scope of this thesis.

The next step was the Commission’s declaration targeting at improvement “in communication on the further development of relations with Turkey” (Delegation of the EC to Turkey, 2005) on 15 July 1997. This communication process consists of a series of measures including “consolidation of the Customs Union and to extend it through services and agriculture, and also stepping up cooperation in various sectors, such as environment, energy, telecommunication etc” (Delegation of the EC to Turkey, 2005).

There have been several meetings and proposals stating the resumption and intensification of financial cooperation, the promotion of industrial and technological cooperation and the strengthening of political and cultural binds through the years. Finally in 1999, the announcement of Turkey as a candidate country on an equal footing with the other candidate countries was realized by the EU in the Helsinki Summit. The EC declared that "recent positive developments in Turkey, as well as its intention to continue its reform towards complying with the Copenhagen criteria, Turkey is a candidate State destined to join the Union on the basis of the same criteria as applied to the other Candidate States" (Delegation of the EC to Turkey, 2005).
The Summit “brought Turkey closer to the operational framework of the EU policy” (Ulusoy, 2005, pg.1) and along the lines of the consequences of the Summit the policy reforms to meet Copenhagen criteria have got impetus (Ulusoy, 2005, Pg -1)

Afterwards, in 2001, The Accession Partnership, which is “a roadmap of the priorities for Turkey in making progress towards meeting all the criteria for accession to the EU” (Delegation of the EC to Turkey, 2005) was formally adopted by the EU Council. Its objective were based on the Commission's 2000 regular report on Turkey’s progress towards the EU membership is to identify the priority areas

for further work within the single framework with the help of financial and technical assistance provided by the EU (Delegation of the EC to Turkey, 2005).

Eventually, after waiting 45 year, the Commission was satisfied with the compliance of Turkey with the Copenhagen political criteria; and on 17 December 2004, Turkey achieved to obtain the date to launch accession negotiations as a candidate country for the date on 3 October 2005. One thing is obvious that the substantial effort should be made by both sides to stimulate and support the reforms in order to gain benefits of this process mutually. In this respect, the duty of the Turkish government is to set up policies and strategies to enhance transposition, implementation, and enforcement of the EU acquis.

6.1. The Review of EU environmental policy

The current Community environmental policy started to be structured in the early 70s; the first Environmental Action Plan was launched in 1973. During the following years, the growing attention was paid to environmental issues, so that in 1987 the specific environmental policy chapter was included in the European Treaty by the Single European Act (SEA) (Krämer, 2000). The 80s is the period when the EC started to move away from growth-oriented development to sustainable development and this emerged the need for integration of environmental concerns to all other Community policies (Lenschow, 1997). In line with this objective, the fifth European Environmental Action Plan (EAP) came into force in 1993 with its much more comprehensive approach consisting of the precautionary principle, shared responsibility, and polluter pays approach. Five target sectors have been emphasized in the plan, which are industry, energy, transport, agriculture, and tourism because of their significant adverse impacts on the environment in several ways (Lenschow, 1997).

Furthermore, the Maastricht Treaty in 1992 and the Amsterdam Treaty in 1997 enhanced the position of environmental issues among other policy and the European Environmental Policy has gained priority from several aspects. At present, the sixth EAP that has been in force until 2010 draws attention to sustainable development principles climate change, biodiversity, health, resource management, environmental administration (EUROTEX, 2001). Moreover, at present, the EU environmental legislation consists of roughly 300 pieces of directives, regulations, and amendments to set out the legal background for high level of environmental protection through the EU (ECOTEC et all, 2001).

6.1.1. Differentiation in implementation of the EU Environmental Policy among the MS

The environmental conditions, pressure, and awareness are varying through the different regions in the EU, and policy makers within the community are bearing in mind this important point while setting up new regulations. Several instruments have been implemented to ensure uniform compliance among the MS despite of the diversified conditions. On the other hand, this does not mean that policy makers develop policies just considering variation in environmental situations of the MS (Krämer, 2000)The Community still has the right to force the MS to implement stricter community regulations in case of low level of environmental protection in any state. There have been two emerging problems, which are variation in “the application and enforcement of Community environmental provisions” and “the enlargement of the Community” (Krämer, 2000, pg.140). The differentiation in environmental compliance of the MS because of economic, social, and environmental dissimilarities had been existed before the enlargement. For instance, institutional capacities, financial resources, and awareness to implement wide range of the Commission’s provisions are not at the same level for all MS (Krämer, 2000).

However, with the accession of 10 new states, which do not have the environmental protection system as strict as the EU, has resulted in increase of disparity of environmental policy implementations and

the level of environmental protection. The concerns about their poor environmental performance accompanying with geographic variation, poorer economic condition has underpinned perception that "it will be too demanding for these new EU members fully comply with European environmental provisions" (Pellegrini, Gerlagh, 2005, pg. 2). Although particular efforts have been undertaken by both new member states and the EU there are still some issues, which hinder the compliance with European environmental policies. For instance, difference in new and old Member States' economic conditions results in diverse level of priority, which environmental issues have. Moreover, differentiation in institutional and governance structures among the new Members leads to variation in environmental policy stringency and level of environmental protection (Pellegrini, Gerlagh, 2005). Therefore, there is a need for policies that are taking into account "the financial and physical conditions" (Soveroski, 2004, pg. 134) of regulated bodies amongst the MS.

In this respect, the IPPC is an example, which considers diversification in local economic and environmental conditions; and the responsibility and flexibility are given to the MS to fulfill the Directive requirements. Another example that has similar principles is the Water Framework Directive (2000/60/EC). The similar approach is required to allow the MS adopt their national legislation to the Community's as far as they have "common goals, albeit at different speed" (Soveroski, 2004, pg.134).

6.1.2. The benefits of compliance with EU environmental legislation

The candidacy of Turkey to the EU and consequent economic, environmental, as well as social reforms to comply with the EU legislation is a challenging process. The environment is one of the most challenging fields towards an effective and efficient transposition of acquis into the national legislation. The EU environmental legislation has been partly transposed into Turkish law, but still many directives and regulations need to be incorporated to national legislation. However, this process requires great amount of investment, for instance the estimated investments cost for new MS has been around 80 to 120 billion Euro (ECOTEC et al., 2001).

For the case of Turkey, there are many challenges to be solved on the issues of water quality, waste management, air quality, nature protection, industrial pollution and risk management, horizontal legislations, noise management, management of chemicals, genetically modified organisms (GMOs), and nuclear safety (ABGS, 2003). In the EU's regular report on Turkey's progress towards accession key issues are mentioned, including horizontal legislation, air quality, waste management, water quality, and nature protection. In addition, the requirement of significant further efforts regarding the industrial pollution and risk management is emphasized. With regard to environmental governance overlaps in competence, lack of coordination, the need for strengthening administrative capacity, low level of implementation and enforcement are pointed out (European Commission, 2004c).

On the other hand, the necessity of a number of amendments, revisions or new regulations and laws within the national environmental legislation demands a comprehensive assistance provided by the EU because of limited financial and administrative resources. Recently in the process of fulfilling the EU membership criteria, the amount of EUR 1.15 billion provided to conduct projects in several fields for the period of 1996-2004 (European Commission, 2005a). However, when the requirement of investment is considered just only in the environmental field, the EU's financial and technical should be increased during the accession process.

Therefore, high investment cost for fully compliance is one of the most significant barriers. On the contrary, several environmental, economic, and social benefits are also likely to be gained from the full compliance with the EU legislation. In this regard, the study was carried out to identify the possible

benefits emerging from compliance with the EU environmental legislation for the Candidate Countries. The benefits are analyzed under three categories; these are "qualitative benefits (e.g. effects on health, agriculture), quantitative benefits (e.g. reduction in emissions and respiratory diseases), and monetarised benefits (monetary value of the avoided costs)" (ECOTEC et al, 2001, pg.2). The results of the study demonstrate that the estimated value of benefits in EUR is ranging from EUR 3.1 to 15 billion in total and per capita amount is between 49 and 233 Euro for Turkey. In addition, the IPPC is among the directives studied with respect to health benefits, resource benefits, and benefits for ecosystems. The benefits are brought by the IPPC implementation for the candidate countries are assessed as follows; "very significant benefits" for health, "significant benefits" for resource benefits (such as fish stocks, fresh water, etc.), and again "very significant benefits" for eco-system (ECOTEC et al., 2001, pg. 2-8).

The most significant benefit throughout the alignment process with EU legislation will be the greater attention to be paid to environmental issues. In a way of carrying out particular effort for transposition of the EU directives, environmental concerns have been gained priority on the national agenda. This will force governmental institutions, private sector, public, NGOs, academics, etc. to engage with environmental considerations in a more effective and efficient way (Personal interview, August, 2005).

Above all these benefits for the case of Turkey, it is also worth noting that the high number of directives transposed to national legislation does not matter without an effective and efficient implementation. Therefore the issues related to implementation of the regulations have to be strengthened, for example administrative framework, enforcement and monitoring of the legislation in Turkey. In addition, cooperation between the government and the private sector has been required to reinforce to handle the investment cost of full compliance with the environmental acquis. Particularly in the case of IPPC compliance Turkish industry' commitment is very significant to make particular efforts to act upon the integrated pollution prevention and control practices (European Commission, 2004b).

6.2. Turkish Environmental Legislation

The 1970s is the time when environmental concerns emerged in Turkish national agenda. In the third Five Year Development Plan for the years between 1973 and 1977 the need for action for environmental problems; and in the 1982 Constitution "the right of citizens to live in a healthy and balanced way" (SPO, 1999, pg.3) were mentioned, and then more concrete step was taken with the 1983 Environmental Act (SPO, 1999). In terms of administrative structure, the Prime Ministry Undersecretariat for Environment was founded to deal with the national and international environmental issues. However, increasing pressure on the environment during 1990s due to rapid economic growth and significant sectoral changes demanded more extensive and comprehensive policies and strategies for the environmental problems. Therefore, the Ministry of Environment replaced the Undersecretariat for the Environment in 1991. It has more responsibilities and authority with much more stuff to set up the environmental policy to decrease the pressure on environment (Okumus, 2002).

Another benchmarking step regarding environmental issues was Turkey's high profile participation to Rio conference in 1992. After the conference The National Agenda 21, process was launched consisting of a number of institutional and legislative elements and strategies for environmental reforms (Okumus, 2002). Moreover, in 2003 the Ministry of Environment was merged with the Ministry of Forestry to reduce bureaucratic burden; and bring together the fragmented competency under one component authority (Okumus, 2002).

Moreover, the objective of being full membership to the EU has been giving an impetus to the efforts to establish infrastructure at the EU level based on proper administration, enforcement, and monitoring systems. In line with this objective, the "Environmental Law" came into force in 1983, and several regulations have been issued to date. The major regulations in Turkish Environmental Legislation are as follow:

- Air Quality Control Regulation (1986)
- Noise Control Regulation (1986)
- Water Pollution Control Regulation (1988)
- Solid Waste Control Regulation (1991)
- Environmental Impact Assessment (EIA) Regulation (1993, amended in 2003)
- Dangerous Chemicals Regulations (1993)
- Medical Waste Control Regulation (1993)
- Hazardous Waste Control Regulation (1995)
- Soil Pollution Control Regulation (2001)
- Conservation of Wetlands Regulation (2002)
- Environmental Inspection Regulation (2002)
- Regulation on the Control of Packaging and Packaging Waste (2004)
- Metropolitan Municipalities Law (2004) (Ministry of Environment and Forestry, 2004, pg. 21-22)

There is no disagreement that Turkey has the environmental legislation containing a number of regulations and laws; however, there are still serious environmental problems due to several reasons. The main reason is the lack of integration of environmental concerns to economic and social decision-making mechanisms. The "National Environmental Action Plan" which is intended to be in force for over 20 years identifies the barriers for implementation of an effective and efficient environmental management system in Turkey. These are "over-reliance on the regulatory mechanisms, little integration of environmental factors in planning, limited public participation, inadequate enforcement capacity to implement environmental law, little use of environmental information, over-centralization of budgets, authority and information, low level of awareness about environmental rules, and inadequate environmental content in the educational system" (SPO, 1999, pg.7).

In order to eliminate or at least minimize these problems, NEAP sets out several programs, actions, strategies, and instruments for the short-term (5 years) and medium- term (10 years) periods. The priority areas of environmental pollution are recognized as "the urban environment (air quality, water supply and wastewater, and solid waste management); natural resource management (water resources, soils and land, forests, biodiversity); marine and coastal resources; cultural and natural heritage; and natural as well as man-made environmental hazards" (SPO, 1999, pg.7). In this regard, the future projects on the issues of "enhancing environmental management system, improving information, and awareness, investment in environment" have been intended to be implemented by the leading institutions (SPO, 1999, pg.7-10).

6.2.1. The Directive on Integrated Pollution Prevention and Control (IPPC) (96/61/EC)

The feature, which distinguishes the IPPC from other EU directives, is the integrated approach. Therefore, it is an important step towards avoiding the adverse effects of medium – specific approach that is observed in Turkish Environmental Legislation. It will also be an opportunity to set a uniform and harmonized permitting system in Turkey. There are many regulations and laws dealing with many issues in a fragmented way, or any sector specific problems, such as industrial pollution, are dispersed

under the scope of more than one regulation. Therefore, transposition of the IPPC into the national legislation will be a significant step to integrate regulations contending with industrial pollution under the umbrella of one regulation. However, the adoption of the Directive is at very early stage in Turkey, the authority responsible for the adoption and implementation of the Directive is the Ministry of Environment and Forestry (MoEF). If it is required, MoH will participate in the harmonization activities in related issues (ABGS, 2003). In this respect, activities have been started to prepare suitable infrastructure for the IPPC implementation in Turkey. The analysis of legal gap and requirements for transposition and implementation of the Directive and stakeholder communication have been initiated. The project entitled "Institutional Strengthening for the Adoption and Implementation of the Integrated Pollution Prevention and Control Directive" in collaboration with the Netherlands launched in 2003 for a 2 year-period (ABGS, 2003). Within the agenda of the project, the following activities were achieved:

- The actors who are likely to be influenced by the process were identified and their potential roles were evaluated.
- In-depth analysis of existing permitting and auditing systems within the legal and institutional structure was done, and in the light of the outcomes basis of the strategies has started to be developed.
- The training programmes were carried out to create an "Expert Team"
- A pilot study was performed in an installation in chemical sector
- The review report consisting of all the findings was published at the end of the project (Sanalan, 2004)

In addition, the BREFs for the textile industry and for Cement and Lime Manufacturing were translated to Turkish by the Turkish Textile Dyeing and Finishing Industrialists Association (TTTSD) and by Turkish Cement Manufacturers Association. However, the awareness about the IPPC and its provisions is lacking and the process is quite slow because of several reasons to be mentioned in the subsequent sections (Personal interview, July 2005).

6.3. Institutional framework and environmental enforcement in Turkey

The role of effective and well-organized public administration is very significant through the processes of environmental legislation establishment, implementation, and enforcement. However, in Turkey, many actors are involved in environmental administration and competence has been divided over many institutions. Besides Ministry of Environment and Forestry (MoEF), Ministry of Health (MoH), Ministry of Energy and Natural Resources, Ministry of Agriculture and Rural Areas, and other specific departments under these ministries have an important role with respect to particular environmental issues. In addition, local institutions have powers on behalf of these central bodies (Ministry of Environment and Forestry, 2004).

This fragmented structure results in significant problems at the implementation, enforcement, and monitoring processes of not only environmental regulations but also other regulations in other policy areas. For instance, different branches of different central authorities and municipalities at local level are enforcing and monitoring some regulations, and due to unclear definition of competence, lack of coordination, lack of information dissemination and exchange, and insufficient feedback mechanism; there is an extensive "authority overlapping" at local level (OECD, 2002, pg. 27-28). As a result, there are "inconsistencies across regions and between authorities" (OECD, 2002, pg.28) and low level of regulatory compliance. The "hierarchical and interventionist bureaucratic" practices are also apparent in Turkish government system. This gives less flexibility to local authorities, and longer time is required to implement any decision at local level (OECD, 2002, pg-8). These problems can be solved

by “extending of the necessary decision-making powers, giving true freedom of action, and empowering autonomy” to the local authorities (OECD, 1997, pg 459-460).
Another weakness of the existing administration is insufficient inspection and sanction system in case of non-compliance. This problem is mostly apparent in licensing and permitting procedure, sometimes authorities do not take notice of future adverse impacts of facilities because of the economic and employment outcomes of industrial activities. Instead of enforcement of implementation of requirements of any specific regulation “by the book”, they come to an agreement with business upon “tolerable solutions”. The simplest example is “the extension of deadlines for required environmental protection investment” (OECD, 2002, pg 27). Unfortunately, these kinds of applications are enhancing the attitude of “law can be navigated around rather than complied with” (OECD, 1997, pg 459-460). In addition, lack of rigorous fines and penalties to discourage operators to infringe of regulations and law underpins the problem (OECD, 1999). All these failures in the governance system result in insufficient enforcement associated with low level of compliance with environmental legislations. Therefore, required adjustments and revisions should be done in the administrative structure in order to gain the highest level of objectives foreseen by the policies.

6.4. Environmental Licensing in Turkey

Many governmental bodies have been involved in licensing and permitting system in Turkey. They are Ministry of Environment and Forestry (MoEF) and its Provincial Offices, Ministry of Health (MoH) and its Provincial Health Offices, Governorates, and Metropolitan Municipalities. At present, the installations have to apply approximately fourteen different licenses or permits that are issued by different institutions. For instance, while MoEF is responsible for environmental permits concerning air quality, water discharge, hazardous waste etc.; municipalities deal with permits on waste water sewer connection and operation, and solid waste disposal under the scope of the Environmental Law (EL). The installation is also regulated under the Non- hygienic Establishment Regulation (GSM) (Ministry of Environment and Forestry, 2004). Within the GSM, three pieces of permits are issued:

Facility or Construction Permit: It is issued before construction and after obtaining pre-permits for emission and discharge.
Trial Operation Permit: It is granted at maximum one year after completion of construction, so it should be reviewed regularly.
Operation Permit: It is issued after the installation has operated for a while in reference to trial-operation permit (Ministry of Environment and Forestry, 2004, pg. 24).

The MoH is an authority to implement the GSM regulation; therefore, application check, monitoring, and inspection have been made by central and local ministry branches. However, these three specific permits can be obtained as long as the installations obtain the environmental permits as requirements of the EL. This complex, fragmented, and centralized structure is far from the integrated approach envisioned by the IPPC. Industrial operators have to apply several medium-specific permits separately; and for some cases, more than one permit needs to be applied for the same issue. Furthermore, the system has become more complicated by the introduction of the Metropolitan Municipalities Law in 2004 that requires the shift of authority in the licensing and enforcement of the Class-1 facilities within the GSM regulation from MoH to municipalities (Ministry of Environment and Forestry, 2004). The details and required documents for the permit application are beyond the scope of this thesis, therefore more emphasis will be given to consequences of the system. These issues have been emerging due to the failures in the system:

- Medium- specific approach and complex procedure
- Inconsistency between the contexts of permits issued, such as mostly technical matters taken into account in the environmental permits under the EL and in GSM administrative issues are dominant.
- Granting permits after the facility starts to operate
- Lack of systematic, integrated, and comprehensive regulatory system
- Extensive fragmentation in governance structure associated with unclear definition of competence of governmental bodies, lack of coordination and collaboration mechanism between the governmental institutions lowering the effectiveness of actions (Ministry of Environment and Forestry, 2004).
- Insufficient enforcement and monitoring mechanisms causing low level of compliance with the legislation
- Lack of public consultation having negative impacts on credibility, legitimacy of governmental activities, and compliance to the regulations
- Lack of skilled and trained staff, equipment, and financial resources at national and regional level
- High level of complexity, widespread fragmentation and low transparency in the current permitting system (OECD, 2002; European Commission, 2000)

In the figure below, the state of the existing licensing procedure is analyzed at three significant stages; administration, implementation, and outcomes. There is an obvious interaction between these three phases; any failure in administration stage reflects itself in a negative way at implementation stage, and improper implementation practices results in negative outcomes, such as low level of compliance, illegal activities, but the most important is increasing environmental degradation.

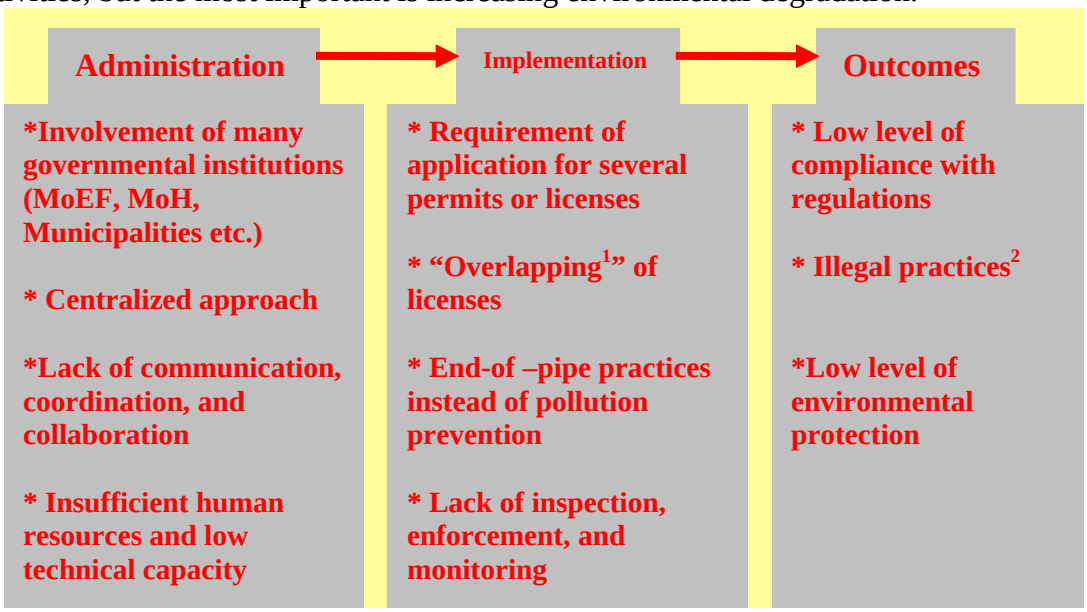

Figure-2: The interaction between the administration, implementation, and outcomes

[1] *Different licenses by different institutions for the same matter (Ministry of Environment and Forestry, 2004).*

[2] *For instance, widespread usage of illegally constructed wells in textile industry (Personal interview, August 2005)*

7. ANALYSIS OF THE IPPC DIRECTIVE IMPLEMENTATION IN TURKEY

The objective of this thesis is to examine the main challenges when implementing the IPPC Directive in SMEs in the Turkish textile industry. In light of the findings of the literature review and interviews, it is concluded that there are a number of factors that will influence the implementation of IPPC in Turkey. Therefore, the evaluation criteria is structured based on the level of relevance of the IPPC with the existing problem, effectiveness and efficiency of the IPPC implementation in Turkey, possible negative and positive effects on the sector; and the processes of adoption, implementation, and monitoring. The questions are answered within each criterion to assess these factors and their possible impacts on the transposition, implementation, and enforcement processes.

However, some responses are based on limited knowledge because of early stage of the IPPC implementation among the EU as well as transposition of the IPPC in Turkey. Moreover, appropriate data for SMEs in Turkey particularly for those in textile industry in order to demonstrate their environmental performance could not be obtained during the research. Therefore, most of the data was gained from interviewees who have an experience on this field. Therefore, while some of the questions are answered based on appropriate knowledge, some have to be answered based on the predictions of limited numbers of experts in this field in Turkey.

Criteria		Questions for Analysis
Relevance		***How does the policy measure contribute to the solution of the overall problem?** ***To what extent is there a consensus about the need to implement the IPPC in Turkey?** ***How urgent is the need for action in terms of industrial pollution and licensing procedure in Turkey?**
Effectiveness		***Are there clear and relevant objectives set by the IPPC?** ***Is there a specific action plan with concrete measures in Turkey regarding the IPPC?** ***Is the structure and requirements of the IPPC appropriate to be implemented in Turkey, particularly for textile SMEs?** ***What are the national and sectoral barriers and drivers to reach the desired objectives in Turkey?** ***Is there an emphasis on sufficient stakeholder participation and interaction during the adoption, implementation, enforcement, and monitoring processes?** ***Is there a performance indicator system to evaluate outcomes?**
Efficiency		***What would be the cost of implementation of the IPPC for governmental sector and private sector as well in Turkey?**
Impacts	**Positive**	***What kinds of benefits might emerge as outcomes of the IPPC implementation in SMEs in textile sector in Turkey?**
	Negative	***What would be the negative effects of the IPPC on the textile sector?**
Adoption, Implementation, and Monitoring		***Is there flexibility allowing national actors to choose the appropriate way of implementation based on national conditions?** ***Should there be some adaptation and modifications in the structure of the IPPC with respect to existing conditions at national environment, especially for textile SMEs?** *** Which control mechanisms would be used to monitor the process?**

Table-3: The evaluation criteria and questions (Sourced: Wuppertal Institute, 2004, pg. 55)

7.1. RELEVANCE

7.1.1. How does the policy measure contribute to the solution of the overall problem?

There is widespread evidence that unsustainable production and consumption patterns are dominant through the European industry. It is stated by the Commission, "it is much easier to change the production patterns of some twenty thousand companies than it is to change the consumption patterns of hundreds of millions of citizens of the European Union" (European Commission, 2005a). Therefore, there have been several regulations and laws to integrate sustainability to at least to production patterns. However, in spite of considerable improvements concerning reduction in industrial sourced pollution in recent decades, "industrial production processes still account for a considerable share of the overall pollution in Europe" (European Commission, 2005a). For that reason, it has been unavoidable for the EC to lay down a set of measures, which are different from the previous ones in terms of its approach, instruments, and implementation practices. Therefore, the IPPC directive, which came into force in 1996, is aiming at prevention and control of the industrial sourced pollution by applying obligatory integrated permitting system to the wide range of industries in Europe.

The same, in some cases more serious, challenges exist in the case of Turkey. The relevance of the IPPC Directive with the current situation in Turkey can be analyzed from three main perspectives, including the lack of integrated framework for environmental issues in regulatory system, IPPC's focus on the manufacturing site of the product chain, and lack of environmental innovation in Turkey. Firstly, it is worth noting that Turkey has a number of pieces regulations and laws to regulate environmental related issues, however the outcomes are disappointing. One of the major reasons is that medium-specific approach, which ignores the strong interrelation between environmental impacts of any industrial activity, is dominant in the environmental legislation. Therefore the integrated approach, which is introduced by the IPPC Directive, will be an important step towards taking into account the interrelation between the impacts.

Secondly, Turkish industry is based on the manufacturing site of the product chain with leading private sector activities, especially textile industry where spinners, weavers, and apparel manufacturers are dominant (SPO, 2004). Therefore, the Directive, which is addressing the environmental concerns on production sites, is likely to be an effective policy to achieve its intended goals in the case of Turkey. Moreover, it may pave the way to the new environmental trends that concentrate on the upstream (e.g. extraction of raw materials) and downstream (e.g. patterns at consumption phase) environmental impacts of product chain, such as the Integrated Product Policy (IPP)[5] (Wuppertal Institute, 2005, pg.10).

Finally, IPPC may be a significant driver for environmental innovation that is not an issue where particular attention has been paid. Therefore, with the integration of BAT to the manufacturing processes, companies may tend to undertake innovative activities in the field of environment. As a conclusion, IPPC may be benchmarking step to establish an effective regulatory infrastructure, which is aiming at cutting industrial sourced environmental pollution at the highest level

7.1.2. To what extent is there a consensus about the necessity of the IPPC implementation in Turkey?

The contribution of the industrial activities to environmental degradation in Turkey is a significant problem. Especially during 1990s due to high rate of economic growth accompanied with "rapid sectoral growth in energy, industry, transport, and tourism and population growth", the environmental

[5] For more information see; http://europa.eu.int/comm/environment/ipp/home.htm

degradation has been increasing (OECD, 1999, pg.2). Therefore, there is need for the implementation of IPPC principles among Turkish industry to prevent and control the industrial pollution. Moreover, Turkey suffers from several shortcomings of existing administrative, legislative, and permitting system, for example administrative fragmentation, lack of enforcement, and medium-specific and complex permitting procedure. Therefore, integrated permitting system and BAT applications which are introduced by the IPPC directive, will set the minimum standards for environmental conditions while regulating the industrial pollution by uniform, effective, and efficient permitting system.

On the other hand, in Turkey, the progress recorded for transposition of IPPC into the national legislation is at very early stage. Therefore, it is too early to say much about its implementation and impacts on industrial pollution. MoEF has recently started to launch initiatives to transpose the IPPC into national environmental legislation. For instance, the communication between the MoEF as an authority to transpose and implement the IPPC and key stakeholders (e.g. private sector, associations, and academics) has started to assess political, economic, environmental strategies and possible outcomes of IPPC implementation in Turkey. Consequently, it has become appear that Turkish industry is in favor of IPPC implementation. The most significant reason is that operators are suffering from the current permitting system therefore IPPC is expected to be used to reduce administrative burden that is exposed by the current system. However, they are not very aware of environmental protection aspects of IPPC and its provisions, such as BAT, ELVs etc. Therefore, steps that are more concrete should be taken to raise the awareness of Turkish industry about the IPPC and its requirements. It can be concluded that despite the lack of awareness on main principles of the IPPC Directive there is a consensus in implementation of IPPC in Turkey.

7.1.3. How urgent is the need for action in terms of industrial pollution and licensing procedure in Turkey?

In general, “low awareness to environmental issues, low level of administrative capacity, lack of implementation, enforcement, and monitoring, and low public participation” (OECD, 1999, pg.2-5) are major barriers to the activities to stimulate environmental protection in Turkey. There are several pieces of legislations regarding industrial pollution. However, the objectives cannot be achieved and industrial pollution keeps its priority on the environmental agenda as one of the most serious problem waiting to be solved due to these obstacles. This situation is also mentioned in the EC Regular Report on Turkey “industrial pollution and risk management, legal alignment and implementation require significant further efforts” (European Commission, 2004c, pg.134). Therefore, there is an emerging need for effective and efficient administrative and legislative systems in Turkey to cut industrial-sourced environmental problems.

It is also worth mentioning that significantly increasing environmental awareness among EU market is one the major reasons for the implementation of IPPC among Turkish industry. At present, in the EU market, outsourced retailers are interested in their suppliers’ activities not only from economic point of view but also from environmental aspects of their manufacturing practices. Therefore, Turkish textile business, which is export-oriented and has a large export share in the EU market, should integrate environmental standards into their production processes. For that reason, IPPC may be an opportunity to set the minimum conditions to incorporate environmental concerns into the business practices (Personal interview, August 2005).

7.2. EFFECTIVENESS

7.2.1. Are there clear and relevant objectives set by the IPPC?

The EC declares the purpose and scope of IPPC as "to achieve integrated prevention and control of pollution arising from the activities listed in Annex-I…lays down measures designed to prevent or, where that is not practicable, to reduce emission in the air, water and land…in order to achieve a high level of protection of the environment taken as a whole" (Council Directive, 96/61/EC, Article-1). In order to achieve this, an integrated permitting system will be implemented based on the integrated approach considering all mediums and pollution prevention at source instead of end-of-pipe solutions.

In this regard, the objectives set by the IPPC are in line with the intended results foreseen by the current Turkish environmental legislation. However, different approaches have been implemented in both concepts. The results obtained so far from the implementation of current system demonstrate that fundamental changes are required in practice as well as in theory. Therefore, it could be concluded that the IPPC has established clearer relevant objectives and frameworks compared to the existing system. However, the effectiveness and efficiency of the IPPC considerably depends on the means of implementation, and results will be observed in the long-term.

7.2.2. Is there a specific action plan with concrete measures in Turkey regarding the IPPC?

As it was mentioned before, the transposition of the IPPC Directive into the national legislation is at very early stage in Turkey. The capacity - building project mentioned previously is one of the initiatives regarding IPPC. In addition, the IPPC Directive has the priority in the National Programme for Adoption of Acquis and the foreseen timetable for activities has been stated. Harmonization of national legislation on industrial pollution with the EU Directives, and required adjustment in institutional structure in terms of administration, technology, and human resources are intended to be finished until 2010. At the same time, it is also emphasized that the transposition process demands considerable efforts and high amount of investment; therefore, the dates of "adoption in parliament" and "entry into force" have not been decided; it will be determined during the transposition process in light of reflections (ABGS, 2003, pg. 628-630).

7.2.3. Is the structure and requirements of the IPPC appropriate to be implemented in Turkey, particularly for textile SMEs?

Generally, large-scale industrial installations are within the scope of the IPPC. However, in many countries SMEs also fall under the scope. However, it is challenging to implement IPPC among SMEs at a high compliance level (European Commission, 2003a).The reasons are varying in response to national and international factors. However, there are general difficulties, which are valid almost for all SMEs, including high cost requirement, complexity and some failures in BAT applications and BREFs. This makes necessary to provide technical and financial support to SMEs in order to foster their compliance and prevent adverse socio-economic impacts.

In this regard, in the recent Communication Report, 14 countries, which are (EU-15: Germany, Ireland, Austria, France, The Netherlands, Greece, Portugal, United Kingdom, Sweden, Denmark; new members: Czech Republic, Hungary, Latvia, and Malta; non-members: Norway and Turkey) mentioned the disadvantageous situation of SMEs and recommend necessary measures to be taken. These are technical and monetary supports, such as grant aids, guidelines and training, minimizing the administrative burden, and tailoring BREFs for intensive and comprehensive information exchange among SMEs (European Commission, 2003c).

In the case of Turkey, a significant number of SMEs are expected to be under the scope and they may face the challenges similar to those in the MS. As it is mentioned before, the low level of environmental awareness, lack of knowledge and human resources, and the lack of financial resources are major constrains hindering integration of environmental concerns to on-going business practices for most of the SMEs in the world. Nevertheless, other domestic factors, which are vulnerability to unstable economic conditions, lower workforce, and turnover compared to other OECD and the EU countries might lead to problems that are more serious for Turkish SMEs (OECD, 2004b). Therefore, recommended measures to improve the situation of SMEs may also be applicable for Turkish SMEs to ensure high level of compliance with IPPC and increase the benefits to them.

With respect to Turkish textile industry, the number of textile installations, which will be likely to fall within the scope, has not been known exactly. However, there is widespread evidence that textile industry will be affected considerably. It is estimated that 90% of the whole textile industry, which is mostly SMEs, will be regulated by the IPPC Directive. However, during the transposition process, information and data that are more precise will be obtained in the light of the negotiations with stakeholders and baseline studies. However, the matter, which is already certain that Turkish textile industry has high level of manufacturing technology although there are not widespread environmental implications integrated to production processes. Hence, it is believed that the integration of BAT into the current manufacturing processes may require less investment compared to the other sectors in Turkey, therefore the transition period is likely to be shorter, and higher level of compliance may occur compared to other industries. Therefore, if the necessary financial and technical supports have been provided to textile SMEs, it is believed that IPPC will be a significant step towards cutting the textile industry sourced pollution in Turkey (Personal interview, August 2005).

7.2.4. What are the national and sectoral barriers and drivers to reach the desired objectives in Turkey?

The main barriers, which may hinder transposition and enforcement of the IPPC Directive in Turkey, are identified based on three sources. The barriers, which are due to some weaknesses of the IPPC itself, are mentioned in chapter-2, such as unclear definitions, confusion in statements etc. As it is also mentioned in previous chapter, the barriers that are results from the failures in environmental governance and permitting system in Turkey; such as administrative fragmentation, complex structure, lack of enforcement and monitoring. There are significant sector-specific barriers may hamper the initiatives, these are;

- Low awareness about environmental issues and potential opportunities offered by environmental management techniques, such as waste reduction and recovery, resource efficiency, and lower operation cost among textile companies.
- The gap between the textile enterprises in terms of financial resources, technology, and human resource across the regions might cause that while some installations adapt themselves to newer BAT techniques. Some might lag behind the process and their closure might occur
- Lack of awareness and knowledge on IPPC and its principles among textile industry
- Insufficient treatment facilities in textile manufacturing plants
- Lack of emission inventories to assess the current environmental performance of the textile sector (Personal interview, August 2005).

On the other hand, there are many drivers, which might underpin the implementation of IPPC in Turkey.

- Increased NGO activities to raise environmental awareness in the Public

- Expectation of EU membership and particular efforts on adoption the EU acquis
- Export-oriented textile sector with high competitiveness in international market
- Increasing attention paid to environmental concerns at international level and its positive affects on Turkish business (European Commission, 2000).

7.2.5. Is there an emphasis on sufficient stakeholder participation and interaction during the adoption, implementation, enforcement, and monitoring processes?

The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters which came to force in 1998 have raised the attention on the significance of public participation in environmental decision-making mechanism (European Commission, 2005f). In this regard, the provision of IPPC on the public access to information and participation in the permit procedure was amended in 2003 "to enable the Community to ratify the Aarhus Convention" (European Commission, 2003a, pg.19). For instance, as a requirement of the IPPC, the public has rights to access any draft decision of permit, a review of permit applications, and the inventory of emissions (European Commission, 2003a). In fact, significant benefits can be gained from high level of public participation. For instance, the opportunity is given to the public to express their opinion on the environmental issues and to the regulators to solve the issues under discussion, this leads to raise in public awareness on environmental issues is increasing. Moreover, transparency of practices and accountability to the policy-makers are promoted with increased public participation and consultation (DEFRA, 2005).

In this process NGOs are key actors at the center of the triangle of the regulators, operators, and the public to enhance communication between them. Moreover, NGOs can support and improve compliance to the IPPC by providing the solutions, new approaches, and new information (LPPC, 2003). The involvement of a number of NGOs facilitates the dispersion of the environmental issue among wide range of stakeholders and help environmental concerns to raise their status on the public's agenda.

On the other hand, if there is not systematic and well-organized public participation and consultation system, this process might be time consuming and results in some problems. For instance, Germany states its worries about the issue as "further –widening participation on the part of public leads to additional unnecessary delays in authorization procedures and the decision-making competence of the authorities is put in doubt through shifting into public view with the result that the competitiveness of the European textile industry is considerably damaged vis-à-vis international operators" (European Commission, 2003b, pg.149). Therefore, there are different practices among MS, for instance while some countries have strict rules and fulfill the requirements, some are more flexible, and there are not activities to encourage public participation and consultation to the process (Brink, Farmer, 2003).

In the case of Turkey, there is a public participation procedure in some applications, such as during the EIA process; however, "public participation is relatively new process in many instances" (OECD, 1999, pg. 3). Due to lack of environmental reporting amongst private sector and publications of environmental inventories, NGOs as well as the public cannot reach sufficient information on environmental performance of the industry (OECD, 1999). This restricts affected parties' intervention to the cases that may cause adverse environmental impacts. Therefore, for the case of IPPC, there might be low level of public participation and consultation to speed up the transposition and implementation of the IPPC. However even at minimum level it is compulsory to allow the public to take a part in the process; therefore, authorities in Turkey have to allow the public to participate in to

the process in some extent, but not at high level (Personal interview, August 2005). In this regard, the involvement of chambers, associations, and institutions to the process is crucial in order to raise awareness of IPPC that has the potential to prevent and control the industrial pollution and the necessity of its implementation. For instance, Turkish Industrials' and Businessmen's Association (TUSIAD) [6] which has recently started to address main environmental issues by preparing seminars and publishing technical reports concerning environmental problems to raise the commitment of Turkish business to need for integration of environmental concerns to business practices (Kalaycioglu, Gönel) may play a key role in during the implementation process of the IPPC Directive in Turkey.

Another institution which may have considerable contribution to the process is Turkish Office of the Regional Environmental Center for Central and Eastern Europe (REC)[7], which is aiming at enhancing the cooperation between governmental institutions, NGO's, and private sector by facilitating the information dissemination among the related actors. Moreover, a number of training programmes, seminars, and workshops have been carried out by REC to build the administrative and technical capacity within the key actors during the accession process (REC Turkey, 2005). The new initiatives to raise the awareness on the IPPC Directive may be launched and carried out under the auspices of these institutions. By this way, the process may get impetus and transition period may be shorter and more efficient and effective outcomes may be gained.

7.2.6. Is there a performance indicator system to evaluate the outcomes?

The transposition of the IPPC to national legislation have been completed by all old 15 MS, however there are still gaps in some countries' legislations, and the state of new MS is been checking by the Commission. For that reason, "it is too early to make any projections of the ecological results of the Directive" (European Commission, 2003a, pg.7). Nevertheless, what have been achieved to date can be pictured based on the indicators such as the number of permits issued, overview reports from installations that are granted permits, emission inventories etc. For the case of textile industry; the data for energy and water consumption, raw material usage, emissions to air and water, usage of hazardous substances, and working environment quality (noise, temperature etc.) can be used to assess the impacts of the BAT on the environmental performance of any textile installation (Kalliala, 2003, pg. 218).

In order to look at the overall situation, the number of permits issued so far can be considered as a performance indicator of the regulator as well as for the operators. According to the Commission's first implementation report on the IPPC, permits were issued for 5545 installations out of 45,000, between 2000 and 2002 (European Commission, 2005e). During thesis research, environmental performance data of the textile installation granted IPPC permit could not be obtained. However, in order to have an idea about the positive impacts of BAT on environmental performance of the installations, the data for waste reduction, waste recovery, and resource efficiency obtained in the UK between 1998 and 2002 from the installations where IPPC was implemented instead of IPC is mentioned. According to the statistics, there was a waste reduction from 11,387 ktonnes to 8,466 ktonnes, increase in waste recovery from 3,721 ktonnes to 5,754 ktonnes, and raise in resource efficiency. However, for the companies (e.g. food and drink industry), which are obliged to have integrated permitting newly, are affected by the

[6] For more information, see www.tusiad.org.tr

[7] For more information, see www.rec.org.tr

IPPC Directive more directly in terms of resource efficiency (Environmental Agency, 2005, pg.2-3). In the light of the statistics, there is a considerable improvement in environmental performance for the case of the UK; however, it also should be kept in mind that this is just one example and the judgment will be more accurate when there is data that is more comprehensive and from all industrial covered by IPPC

7.3. EFFICIENCY

7.3.1. What will be the cost of transposition and implementation of the IPPC in Turkey?

While setting out policies to gain highest environmental benefits, it is also important to select the most cost-efficient way to implement, enforce, and monitor them. Therefore, it is crucial to establish a proper environmental policy expenditure mechanism to be in command of economic factors, which are influencing the process considerably. In Turkey, there have been extensive regulatory reforms in line with the harmonization with the EU acquis communitaire in recent decades; however, there is not such an effective management system to coordinate expenditures made on legal reforms and allocate financial resources efficiently (OECD, 2002). One of the most significant reasons is the lack of legal obligation to undertake Regulatory Impact Assessment (RIA), which has a key role in "ensuring that the most efficient and effective policy options were chosen" and "policy officials do not base decisions on an explicit assessment of the cost and benefits of proposed government actions" (OECD, 2002, pg. 31).

In this regard, in 2002 the study was carried out to analyze the gap between Turkish and the EU environmental legislations and to estimate the investment required to implement the environmental acquis. The data on the table below was obtained for the main EU regulations:

Directive	Cost to Public Sector	Cost to Private Sector	Benefits
Large Combustion Plants (2001/80/EC)	6.60		
Integrated Pollution Prevention and Control (IPPC)	0.48		
Ambient Air Quality	0.28		21.1- 94.4
Major Accident Hazards*			
Drinking Water	1.10		1.5
Urban Wastewater	16.8		7.1
Water Quality Framework	0.19		
Nitrates	0.03		
Solid Waste	1.77		0.8-18
Conservation of Natural Habitats	0.01		
Protection of Animals			
TOTAL	**27.26**		**30.6-121**

Table: 2- Estimated Compliance Costs and Benefits (Billion EUR) (Source: Carl Bro International, 2002, pg. 87)

As it is obvious in the table, for many EU regulations still there is almost no exact data available for the costs to neither public nor private sectors, and possible benefits as well. For most of the directive the costs to public sector was estimated whereas the costs to private sector is still uncertain or even no information available. With respect to the IPPC, there is an estimation of cost to public sector for as 450 million EUR, and the costs for monitoring and enforcement of the IPPC estimated as 30 million EUR. On the contrary, there is no appropriate information to estimate the costs of IPPC implementation to the private sector (Carl Bro International, 2002). Therefore, there is an emerging need for more

comprehensive cost analysis taking into account environmental, economic, and social aspects in order to find out the key points of cost reductions through the transposition, implementation, enforcement, and monitoring processes.

7.4. POSITIVE AND NEGATIVE IMPACTS

7.4.1. What kinds of benefits might emerge as outcomes of the IPPC implementation to SMEs in textile sector in Turkey?

The implementation of IPPC will be a significant step towards establishing effective environmental governance, which is supported by efficient enforcement, monitoring, and consequent high compliance. Some benefits that may emerge because of the IPPC Directive implementation are listed below:

- Implementation of integrated approach with more comprehensive point of view to the environmental problems emerged by industrial activities
- Improvement in environmental enforcement, monitoring, and inspection systems
- Less environmental degradation due to industrial pollution and better environmental quality
- More attention paid to the environmental issues by Turkish business
- Enhance the competitiveness of textile business in the EU market
- Provide a uniform base with less bureaucratic burden and single decision-making procedure
- Opportunity to environmental consultant agencies to get profit (This will be a great opportunity for environmental consultancy agencies to widen their activities and get profits through assisting to companies in terms of the IPPC permit applications, monitoring and reporting of installations' activities to prepare inventories, application of BAT)
- Increase in environmental performance such as increase in resource efficiency and waste recovery and decrease in waste production and operation costs
- Leads to improvement of innovation in the sector
- Good reputation among the consumers (Personal interviews, July and September, 2005)

7.4.2. What would be the negative effects of the IPPC on the textile sector at national level?

The textile industry has a "very complex and variegated" (European IPPC Bureau, 2003, pg.465) feature with respect to size of the companies as well as diversified processes with different level of technology (European IPPC Bureau, 2003). In Turkey while some mills are operating at relatively high level of technology, some have older technology that requires high amount of investment to have the same level of their large-scale counterparts. A number of installations do not have treatment facilities, if they do so; the end-of-pipe approach is dominant through the treatment practices in treatment plants (Personal interviews, July 2005). In this regard, sufficient transition period, technical and financial support should be provided to poor environmental performers (especially SMEs) to make an investment in necessary techniques as well as in human resources, and adapt themselves to new conditions. Otherwise, IPPC implementation may hamper Turkish textile industry's competitiveness, especially SMEs in the sector, and cause the closure of many companies. This disadvantageous situation may force some SMEs to continue their activities in illegal ways in case of insufficient enforcement and inspection practices.

Moreover, the cost of textile products may increase because of internalization of environmental cost to the operation costs. However, this may differ depending on the various environmental technologies applied among the textile installations. Therefore, techniques, which are intended to be used in any manufacturing process, should be analyzed to estimate its costs and possible benefits in reduction of pollution.

7.5. ADOPTION, IMPLEMENTATION, AND MONITORING

7.5.1. Is there flexibility allowing national actors to choose the appropriate way of implementation based on national conditions?

The IPPC Directive requires taking into account "the technical characteristics of the installation, its geographic location, and local environmental conditions" (Council Directive, 96/61/EC, Article-9) while the competent authorities are determining ELVs that have a significant role in determining permit conditions. However, these circumstances show considerable discrepancy through the Europe. Therefore, the IPPC Directive provides "greater responsibility for setting the standards to be met themselves" with an obligation of compliance with "the basic minimum standards" (Soveroski, 2004, pg. 134).

This feature is fostering the different approaches to transposition, implementation, enforcement, and inspection practices, and consequent different level of compliance among the MS. In terms of transposition, while some MS made small modification in the existing system (e.g. Sweden, France) some made major structural changes in national structures (e.g. Greece, Spain) (European Commission, 2005e). Moreover, guidance documents on permit conditions have been provided to competent authorities, and "sector specific legislations based on BAT" (European Commission, 2005e, pg.5) have been developed by some MS.

In this regard, it is foreseen that different approaches will be followed in terms of the means of transposition, implementation, and enforcement of the IPPC Directive in Turkey based on local conditions. In theory, it may not be too challenging to develop new regulations, laws, and standards; however, the issue, which requires considerable efforts, is putting all provisions into practice (Emmott, 1997). However, the lack of enforcement is one of the significant constraints that are already hindering the high level of compliance with the existing environmental legislation. Therefore, in Turkey, the higher level of government's capacity is required to take up administrative and legislative reforms in order to establish necessary structure, allocate adequate resources, and the most important thing is to use these policy instruments in an effective and efficient manner (OECD, 2002).

7.5.2. Should there be some adaptation and modifications in the structure of the IPPC Directive with respect to existing conditions at national environment, especially for textile SMEs?

It is clear from the research findings that it will take quite long time to incorporate IPPC provisions into the national legislation with required modifications in regulatory and administrative structure. The flexibility and responsibility provided to the MS in implementation of IPPC gives Turkish authority an opportunity to set out appropriate environment in accordance with local physical and financial conditions. In this respect, it is unavoidable to apply different approaches while determining threshold values, permit conditions, BAT, ELVs, enforcement actions etc. in Turkey. However, for the time being there has not been a study, which concentrates on the possible approaches that may be implemented for any specific case of IPPC applications.

7.5.3. Which control mechanisms would be used to monitor the process and to ensure compliance?

Information that is gathered during the implementation process plays an essential role to monitor the progress (e.g. level of compliance, effectiveness of the policy etc.) achieved. Therefore, inventories for emissions and discharges are important indicators to evaluate if the permit conditions are being met by the regulated bodies (Okumus, 2002). In this regard, the Commission set out a procedure for reporting of ELVs every three years in order to evaluate the progress achieved by the MS. However, in the first reporting application in 2002, the reports submitted by Members were not satisfactory at all. The reason stated by the Commission is that "they all use very different ways of expressing limits in permits" due to flexibility provided to implement various practices (European Commission, 2003a, pg.

10). The diversified approaches of the MS are also apparent in their monitoring and inspection practices. As a result, different procedures have been undertaken to monitor and inspect the process, such as "on-site inspection, self-monitoring, check by non-administrative bodies (e.g. accredited laboratories)" (European Commission, 2005e, pg.6). For example, while Sweden is checking each installation every two years in Spain frequency of inspection depends on competent authorities' initiative (European Commission, 2005e).
In terms of ensuring the compliance with the Directive, a number of instruments have been used in the MS. For instance, in the UK in case of non-compliance operators are punished by "a fine and/or remediation of the damage to the environment and/or imprisonment in the UK mainland" (European Commission, 2004a, pg.78). On the other hand, in Denmark, the sanction system that is based on "increasing severity" is in practice. Firstly, warnings or cessation orders are undertaken in case of non-compliance, "if this fails then the matter is referred to the judiciary" (European Commission, 2004a, pg. 77).
In Turkey, the monitoring system does not functioning properly, so that there is lack of regular and wide-ranging environmental inventories to be used to analyze environmental performance of industry (Okumus, 2002). Therefore, it may be a significant problem to monitor emissions from granted installations and detect the cases of non-compliances. Another weakness of the existing system is ineffective enforcement instruments (e.g. fines, penalties) which are not strong enough to discipline illegal practices, such as discharges without treatment (OECD, 1999). Therefore, there is an emerging need for establishing an effective enforcement and sanction system not only as a requirement of IPPC but also for achieving higher compliance with the current legislation. In this regard, the system, which is being implemented in Demark, may yield desired outcomes in terms of enforcement and compliance.

8. CONCLUSIONS AND RECOMMENDATIONS

The current legislative structure and permitting system on industrial pollution are not aligning with the provisions of the IPPC Directive. The main reasons can be summarized as lack of awareness on environmental issues, non-integrated approach associated with a number of pieces of regulations and laws for industrial pollution, significant overlapping of competence in environmental governance, and insufficient government capacity to transpose, implement, enforce the regulations and laws to align national environmental legislation with the EU environmental criteria.

Indeed, a number of reforms have been launched in accordance with expectation of the EU membership; however, there is still much evidence that there is an emerging need for particular effort and systematic approach to improve and empower environmental governance with institutional and procedural adjustments. Therefore, in the light of the research results, the step-by-step programme that is systematic and comprehensive should be implemented based on three phases. Involvement of stakeholders in these phases is crucial to foster commitment, cooperation, and motivation of authorities, private sector, associations, NGO's, and academics on the implementation of IPPC in Turkey. Time management is also significant in this process, strict timelines should be set to implement the initiatives timely, and sufficient time should be provided to the regulators and operators to adapt themselves to new applications. At the implementation phase, technical and financial support, and guidance provided to the industry is very significant initiatives to strengthen the capacity and compliance of Turkish business with the IPPC Directive.

In this context, in the following section the measures and activities which are intended to establish an effective administrative structure and legal system for transposition, set up an appropriate atmosphere among Turkish industry to implement and enforce the IPPC, and necessary measures at the implementation stage of the IPPC in Turkey, are recommended through three phases. To begin with,

the administrative and regulatory adjustments for transposition of IPPC into the national legislation should be undertaken as an initial phase.

Phase-1: Administrative and regulatory adjustments for transposition

In this phase, strategies focus on main constrains to operation of administrative and legislative systems, and required adjustments and initiatives at administrative level to facilitate the transposition of the IPPC into the existing legal system are mentioned.

- In-depth analysis should be undertaken within the governmental institutions to identify main structural barriers to operation of the existing administration system effectively.

- In accordance with analysis outcomes, competencies of the bodies should be defined clearly in order to eliminate administrative overlaps in central as well as in local administrative bodies

- Comprehensive gap analysis of legal system from several aspects to find out the key factors leading to inconsistency between national legislation and the EU legislation for industrial pollution should be carried out. (Although there has been a report prepared by a consultant agency to analyze disparities between Turkish environmental legislation and the EU's, it is not extensive enough in terms of regulations and laws for industrial pollution)

- The comprehensive cost-efficiency analysis should be carried out to allocate financial resources and to find out the means to reduce the cost of transposition, implementation, and enforcement of the IPPC Directive in Turkey.

- Comprehensive and stringent agenda should be set with time limits to harmonize existing regulatory and permitting systems with the IPPC Directive provisions without wasting time.

- In reference to agenda, the necessary modifications should be undertaken in the legislative provisions, procedures, and criteria in terms of monitoring, enforcement, and inspection practices, for instance, regulatory change to oblige the industry for regular environmental reporting.

- A range of training programmes should be conducted with the central and local authority bodies to increase their awareness, knowledge, and skills on the IPPC directive

- The independent institution should be established in order to coordinate all related activities; to facilitate the communication between government and Turkish business and other stakeholder groups (e.g. NGOs, academics); and provide technical and regulatory guidance

- A comprehensive baseline study should be undertaken to review the state of environment, especially to identify the emissions from industrial activities.
- Detailed investigation of current IPPC case-studies through the EU, especially among the new Members should be carried out to identify improper implementation polices, challenges and opportunities and to gain benefits from successful practices

- The sectors having priority, threshold values to identify the installations falling under the scope, setting up the ELVs and permit conditions should be carried out in the light of the baseline study and experiences of the MS.

Phase-2: Engagement of main stakeholders with the IPPC Directive

In this phase awareness raising activities such as seminars, conferences, and workshops should be conducted in order to build up shared understanding of the necessity of IPPC implementation, to get high level of diffusion and commitment of the key stakeholders such as Turkish business, NGOs, academics, and to achieve high level of compliance during the implementation process. This phase is relatively significant so that if the high level of commitment has been provided by stakeholders, especially by Turkish business the challenges in terms of implementation, enforcement, and compliance can be more easily overcome.

Phase-3: Implementation and enforcement

In the third phase, the strategies, which concentrate on implementation and enforcement practices for regulatory compliance at the highest level, are recommended. The success in this phase is directly related to the outcomes of the previous phase, namely more commitment and support by business less enforcement cost.

- Strong financial and technical support should be provided to SMEs in textile as well as other sectors through loans, aids, regulatory and technical guidance documents, consultant services, and comprehensive training programmes.

- Pilot projects should be undertaken to assess the strengths and weaknesses of applied BAT and their environmental, economic, and social outcomes

- The platform should be established by the involvement of companies from Turkish and European market to facilitate the dissemination of the knowledge on BAT and technological advances and share of the experience.

- The new instruments, which encourage the operators to fulfill the permit conditions, should be introduced, such as market-based instruments.

As a conclusion, the most significant driver in this process is high level of commitment from Turkish Business associated with extensive collaboration within the key stakeholders. If the appropriate infrastructure is provided for the transposition, implementation, and enforcement the IPPC Directive in Turkey, it may be a significant step towards cutting the industrial pollution which is not only sourced by textile industry but also other industrial activities.

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