
An evaluation of the environmental impact assessment system in Turkey

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Abstract: In Turkey, as a developing country, environmental impact assessment (EIA) is a critical key for environmental protection. EIA is not regulated in Turkey by means of law, but through a decree put into force on the basis of the relevant provision of the Environmental Law.

The EIA Regulation that is currently in effect was rearranged to eliminate operational problems and ensure harmony with European Standards and was put into practice in 2003. In the paper, EIA system is studied under certain headlines and the weak points are determined. Necessary precautions are suggested to strengthen these weak points.

Keywords: environmental impact assessment; Turkey; EIA procedure; Turkish environmental law.

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1 Introduction

Turkey has a unique geographic position at the crossroads between Europe and Asia. The country covers an area of 779,452 km². Turkey's 8,333 km coastline extends along the Black Sea, the sea of Marmara, the Aegean Sea and the Mediterranean Sea [1].

Turkey with such an important geographic location has a rich biodiversity at the same time. Turkey is a country located on the region where three main genealogical centres of the world intersect. According to the studies, 10,093 of phanerogamous plant species are recorded in Turkey. It is established that the number of phanerogamous plants naturally

surviving in Turkey has increased to 10,272 [2]. Furthermore, there exist in Turkey 132 species of mammals, 454 species of birds, 106 species of reptiles, 345 species of fish and 80,000 species of specimens [3].

During the period of development, Turkey, that has important environmental values, has been experiencing threats and destructions of these values. Of the reasons of these destructions, high annual birth rate and bad settlement are the leading ones. Turkey has a vibrant, young population of more than 65 million, 68.6% of which live in urban centres. Turkey's population reached an estimated 66.3 million in 2001 and its annual population growth rate of 1.7% was one of the highest in the world for several years. The size and topography of the country, the growth of the population, and its drift to urban areas create not only environmental problems but also pose major challenges to the administrative make-up and capacity of governmental authorities at central, provincial and municipal levels. High population growth leads to high migration rates to the largest cities in the country. Despite the fact that Turkey is among the countries having the largest lands with the area of 778,997 km² on earth [4] and the lands in Turkey cover various types of soils, [5] lack of comprehensive and well-studied precise land use planning in Turkey and accelerated migration unfavourably contributes to the negative influences of population growth, urbanisation and industrialisation over environment.

No matter how land use planning might be important to protect the environment and have sustainable development, it is difficult to say that there is a national policy determined considering land management in Turkey. In the formation of such a policy, firstly relevant knowledge and documents available must be combined in a systematic manner. Related studies are currently in progress in Turkey, but there are some insufficiencies in the database on which works still continue.

However, it would be unjust not to mention that there are some legal measures regarding land use. Principal provisions are contained within the constitution of Turkish Republic 1982. State is appointed by Articles 44 and 45 of the constitution as responsible for "protection and efficient operation of land." In addition, Article 166 says, "State is responsible for planning economic, social and cultural development and efficient use of national resources". Furthermore, according to Article 56, everybody has the right to live in a healthy and balanced environment. State must ensure this condition.

Other than the constitution, there are some provisions present in some other regulations, primarily in Turkish civil code, having the basis of land protection and usage [6]. However, in the provisions of the laws and by-laws, it is difficult to find preciseness as contained within the constitution. With provisions in different regulations and problems being faced due to immigration and industrialisation, it is obvious that Turkey should have a law of land use and land protection. There have been studies on such kind of law for a long period of time, but it has not been finalised yet.

Not having a law of land use planning and land protection of its own, also causes some complications about the authorised and delegated administrations on land use and planning. For example, the duties of land protection, planning and development are given to the Ministry of Agriculture, General Directorate of State Hydraulic Works, Ministry of Environment and Forestry as well as different departments in Turkey. This problem of duty and authority has to be solved with a new, comprehensive and precise Land Use and Protection Act.

Development plans prepared for five years of period in order to ensure rapid and balanced development in Turkey underline

“requirement for a detailed land study, necessity for a law relating to the protection and use of land resources and making land use planning by means of preparing database.”

A development plan for 8.5 years covering 2001 to 2004 is currently in effect.

Despite the fact that land use planning exists in some regions, there is no precise planning at the national level. For this reason, wrongly used lands are often detected. For example, factories (brick/tile ovens, etc.) may be found on productive agricultural lands or buildings may be constructed within the forest. Furthermore, within the boundaries of Burdur Lake, which must be protected according to Ramsar agreement, the damages caused by brick and tile industries can be clearly observed [7].

Although land classification has been made in Turkey, database on classification of lands as per capacity is not updated and has deficiencies in many respects. This situation prevents the success of land use planning.

Lack of a comprehensive and precise land use planning is not the only source of environmental problems in Turkey. National environmental action plan, points out that Turkey’s major environmental problems are related to the urban environment (air quality, water supply and waste water, and solid waste management), natural resources management (water resources, soils and land, forests, biodiversity), marine and coastal resources, cultural heritage, and natural as well as man-made environmental hazards [8].

As it is stated in the above paragraphs, since the 1950s, Turkey’s rapid industrialisation, urbanisation, and agricultural development have placed an enormous strain on the country’s environment. Over the past few decades, millions of hectares of Turkey’s forests and grasslands have been converted into arable fields or destroyed by unchecked grazing, illegal logging, fire, or colonisation. Among the major problems attributed to the loss of forests and grasslands are the reduction in flora and fauna species, decreased soil productivity, and deterioration of the natural hydrological system in river basins. Intensified agriculture has also contributed to water pollution through chemical fertiliser and pesticide use and animal waste. Air pollution arises to a large extent also from heating systems, fuel-burning techniques, and poor fuel quality, while urban water pollution is attributed mainly to industrial wastes, garbage, and sewage.

With the recognition of the destruction of the environmental values and world trend, Turkey began addressing environmental concerns during the 1970s. National environmental policy was first articulated in the third five year development plan between 1973 and 1977 [8].

The environmental implementations in Turkey start with the constitution at 1982, which deals contemporarily with the issue of both environment and environmental rights. Article 56 says that

“Everyone has a right to live in a healthy and well balanced environment and the improvement of the environment, the preservation of environmental health and the prevention of the environmental pollution is the duty of both State and every citizen.”

The environmental law coded 2872, which came into force in 1983, and is based mainly on the principle of ‘polluter pays’. Article 10 of the environmental law states that individuals and legal entities who directly or indirectly cause environmental

pollution as a result of their activities shall prepare Environmental Impact Assessment Statement (EIS).

The EIA Regulation was put into force in 1993 in Turkey, on the basis of Article 10 of the environmental law. This regulation was amended in 1997 and 2002 and finally a new EIA Regulation came into force on December 16, 2003 regardless of its compatibility with the EIA directive of the European Union (85/337/EEC and 97/11/EC).

In this study, the system brought into effect by the new EIA Regulation shall be examined. Thus, this study shall bring to light the new arrangements as brought forth in the new regulation.

2 Evaluation of Turkey's EIAs procedure

EIA, being a procedure having an important impact on environmental preservation, has a number of varying definitions in literature. Some of these definitions whether national or international, are given in the proceeding paragraphs to outline how EIA is being understood by different parties and consequently has different applications.

EIA, is a method of investigation aiding towards evaluating all objective effects of any economic institutions on its environment [9].

Environmental impact assesment (EIA) is the procedure of assessing the consequences that are likely to flow from a proposed development. It is a planning and management tool for sustainable development that seeks to identify the type, magnitude and probability of environmental and social changes likely to occur as direct or indirect result of a project or policy and to design the possible mitigation procedure [10–13].

Environmental impact assessment as a national instrument shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority [14].

EIA is a procedure that determines the impact of investments, plans and projects on the environment and establishes precautions and alternatives such that definite results concerning the acceptability of an activity may be arrived at [15].

EIA is a technical tool and procedure [16].

From these various definitions given above, it may commonly be concluded that the EIA procedure is an important tool enabling the prevention of potential impact of various activities on the environment; and just as there are varying definitions, the EIA procedure is subject to different applications in various countries.

3 Performance of the Turkish EIA system

Just as there are varying definitions, the EIA procedure is subject to different applications in various countries. Having a relatively recent past, in order to be able to measure as to whether the EIA procedure is on track or not, the method used by Balsam and Wood having evaluation criteria in Table 1, is implemented according to which the evaluation of the performance of the Turkish EIA system is done.

Table 1 summarises the evaluation of the Turkish EIA system against the systemic and foundation measures criteria.

Table 1 Performance of the EIA system against systemic and foundation measures criteria

<i>Evaluation criteria</i>	<i>Results</i>
<i>Systemic measures</i>	
1 EIA legislation	
1.1 Legal provisions for EIA	Environmental law coded 2872 of 1983 EAI Regulation of June 6, 2002
1.2 Provisions for Appeal by the developer or public against decisions	A definite rule is not present in the regulation. Genral principles of law are used
1.3 Legal or procedural specificaton of time limits	Different time limits apply till the stage of decision of the Ministry of Environment and Forestry
1.4 Formal Provisions for SEA	A definite rule is not present
2 EIA administration	
2.1 Competent authority	During EIA procedure MoEF During preliminary EIA procedure Mayorship and MoEF
2.2 Review body for EIA	Scoping-review and assessment commission If MoEF approves, NGOs, unions, universities, etc
2.3 Specification of sectoral authorities' responsibilities in the EIA procedure	Related institutes and organisations are authorised in the commission
2.4 Level of coordination with other planning and pollution control bodies	This subject is not regulated clearly and explicitly
3 EIA Procedure	
3.1 Specified screening categories	Two categories exist; EIA mandatory EIA Preliminary
3.2 Systematic screening approach	Mandatory list exists in EIA procedure MoEF may refer project for EIA as a result of the preliminary study
3.3 Systematic scoping approach	MoEF responsible for the defining scope. General format of EIA report is identified in the regulation
3.4 Requirement to consider altertatives	Annex 3 and Section 1 specifying general format of the EIA reports
3.5 Specified EIA report content	Identified in Annex III of the EIA Regulation 'The general format of the Project Tanıtımı'
3.6 Systematic EIA report approach	Comparison with the format provided by MoEF
3.7 Public participation	Public participation meetings during EIA stages.EIA report is presented to public notice after the submission of the report to MoEF
3.8 Systematic decision-making approach	MoEF reaches the final decision taking the commission studies into consideration
3.9 Requirement for environmental management plans	Requirement follw-up programme after construction, operation and post operation
3.10 Requirement for mitigation impacts	General requirement in EIA Regulation Article 13/d
3.11 Requirement for impact monitoring	EIA Regulation Section 5, Article 19
3.12 Experience of SEA	First pilot study is completed

Table 1 Performance of the EIA system against systemic and foundation measures criteria (continued)

<i>Evaluation criteria</i>	<i>Results</i>
<i>Foundation measures</i>	
1 Existence of general and/or specific guidelines including any sectoral authority procedures	It can be seen in some sectors
2 EIA system implementation monitoring	It cannot be said that monitoring is very successful
3 Expertise in conducting EIA Training and capacity-building [17]	There are many companies authorised to prepare the EIA report

3.1 EIA legislation as a systemic measure

Legislative bases for EIA in Turkey are the Environmental Law and the Regulation of Environmental Impact Assessment. The new EIA Regulation was put into force in 2003, on the basis of Article 10 of the Environmental Law.

EIA Regulation of 2003 consists of 31 articles, six provisional articles and five annexes. This regulation aims to regulate the administrative and technical principles of EIA procedure; identify and evaluate all possible impacts on environment of the activities which may cause environmental problems; to prevent or mitigate the adverse impacts to such an extent that they would not do any harm to environment and to assess the alternatives of the activities.

In the regulation, the Ministry of Environment and Forestry (MoEF) is the final authority in the EIA procedure. MoEF decision is the final decision. As opposed to the decision of the Ministry, there is no provision in the regulation to which the 'developer or public' may apply. This is a major deficiency of the EIA system application, however since either the developer or public may sue the decision of MoEF, this deficiency may be filled through the application of rules of general law. According to Article 125 of the Turkish constitution, "Recourse to judicial review shall be available against all actions and acts of the administration". Thus, it is always possible for the public or developer to object to matters relating to the decisions made by the MoEF, as these decisions are administrative operations.

A recent development in the EIA arena is the emphasis on strategic environmental assessment (SEA) [18]. SEA, would also allow the consideration of cumulative impacts of various projects [19]. The implementation of SEA holds greater importance for developing countries like Turkey. However, there is no formal provision regarding SEA in the EIA Regulation. As it is, actual activities in the EIA procedure are referred to only as 'projects' in the regulation. Since EIA has not been anticipated for policies, plans and programmers, this has brought about a restriction from the outset. For instance, the expression 'activity' has been used in Article 10 of the Environmental Law, which is the basis of the EIA Regulation. And even though there is no provision relating to the implementation of a SEA, there is the presence of a pilot project. In this project, the application of a Strategic Environmental Assessment covers the land usage decisions of Canakkale, a province of Turkey, and its near surroundings [20]. It is important in that it is the first of its kind.

3.2 EIA administration as a systemic measure

The MoEF is the competent authority in the EIA procedure, through its General Directorate of EIA and Planning. In the procedure of selection and elimination criteria, the final decision still resides with the MoEF.

The MoEF, which appears as the single and complete authority in the EIA procedure, establishes a commission, which remains on duty during the EIA procedure. This commission comprises representatives from relevant institutions and establishments, Ministry authorities and project representatives and is named as the ‘scoping-review and assessment commission’ (SRAC). This commission makes all necessary investigations concerning the report during the EIA procedure. The MoEF, when making a decision regarding the EIA report, takes into consideration the studies and decisions made by the commission.

As so required, the Ministry may invite research and specialist organisations, professional associations/chambers, trade unions, associations and NGO representatives to the commission meetings.

3.3 EIA procedure as a systemic measure

In this section, the headings examined are screening, scoping, review, public participation, decision-making and environmental management plans, mitigation and monitoring. Before the explanation of EIA procedure, a flowchart of the procedure is given below for a better understanding in Figure 1.

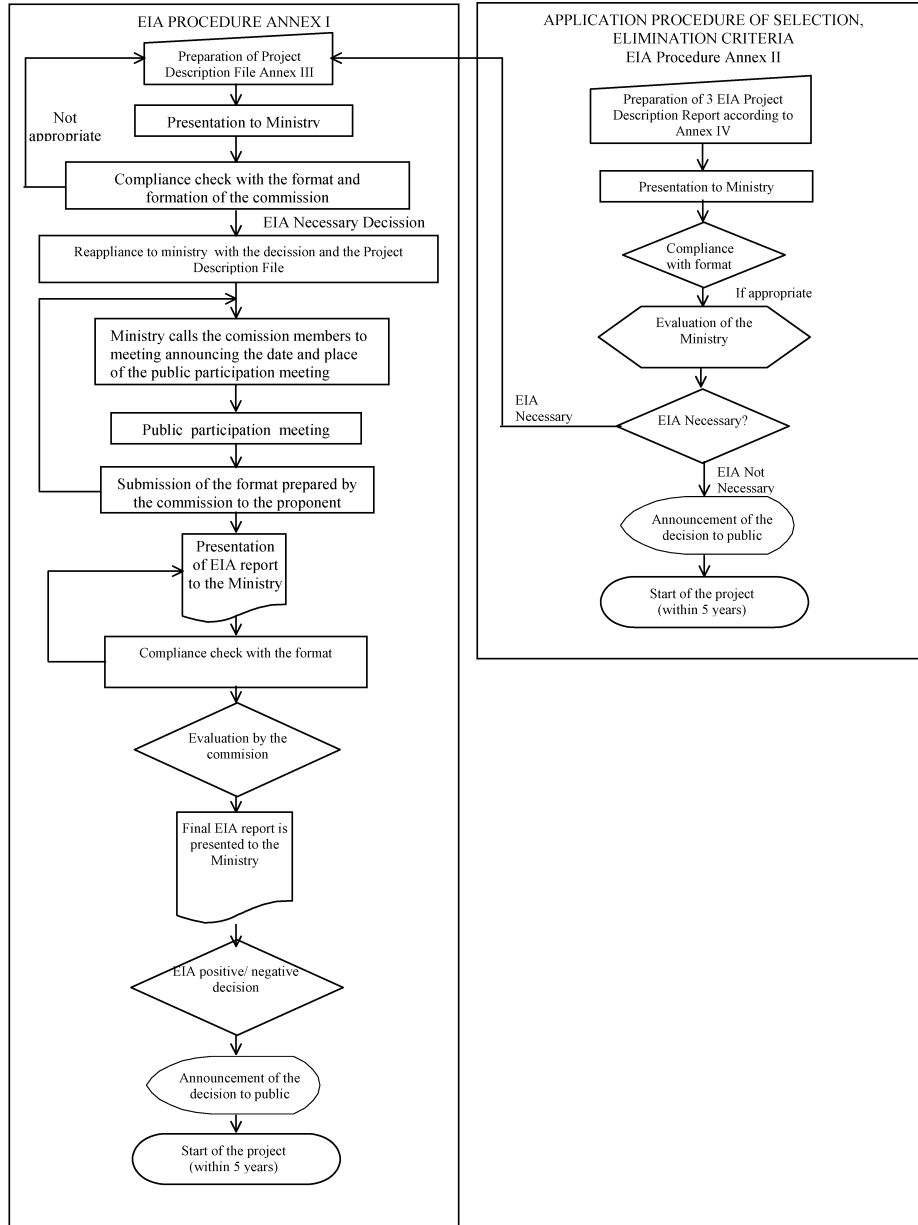
3.3.1 Screening

Screening is the procedure of determination as to whether EIA is obligatory or not [21]. In Turkey’s system the regulations determine as to whether an activity is subject to EIA or not. As stated in the EIA Regulation,

“it is mandatory that towards project realisation, those projects subject to EIA require the preparation of a EIA report, while those requiring a Preliminary EIA Investigation must prepare a ‘project description file’.” (Article 6)

Projects with activities subject to an EIA report are shown in Annex I, while those projects that have received an EIA Requirement decision are given in Annex II. Those projects requiring a ‘project description file’ (Preliminary EIA Investigation) given in Annex II, are projects that come within the scope of the regulations and require changes, or are not within the scope of the regulations but come under subject of the regulations in relation to the changes that will take place. Box 1 gives headings under which the projects in Annexes I and II are subject to. The administrative units do not have the right of appraisal as to which projects in Turkey are subject to EIA during the stage of designation. There is a different arrangement for military projects in the regulations, according to which, application of EIA in military regions is designated between the Ministry and the related establishment through a protocol.

Figure 1 Flow chart



Box 1 List of projects

Projects List For EIA Annex I

Rafineries

Power generation and transmission, Thermic power stations

Nuclear fuel with radiation

Iron and steel melting constructions

Constructions out of melting iron methal that 50,000 ton/year capacity and over

Chemical constructions

Roads, transitions and airports

waterlines, harbours and docyards

Constructions concerned dangerous waste

waste dams and waste pools

Great water transfer projects

Constructions of water store

Meat entegre constructions

poultry and raise pigs constructions that over known capacity

Constructions of Forest products and cellulose

Mining Constructions

Mines

Cement factories

500 ton/day raw oil and 500 m³/day gas

Store constructions of oil, gas and chemical matters that 30,000 m³ capacity and overs

Constructions of explosive and shining productions

River type power stations (50 mw power and over)

Constructions of agriculture medicine

Constructions of battery and accumulator productions

Sugar factories

Projects list for Preliminary EIA Annex II

Chemical, perochemistry, medicine and wastes

Metallurgy, Products of machines and textile

Agriculture, forest, water culture and food

Transportation, infranstructure and side constructions

Energy

Tourism

Sports

Constructions of education and settlement

Mining

3.3.2 *Scoping*

The exercise of identifying and assigning priority to environmental and related social issues that might be examined in the assessment is known to EIA practitioners as scoping [22].

During the stage of scoping, the content of the EIA report is determined. In Turkey, a format has been prepared such that what is to be found in the report and how these are to be realised is given. In the scoping studies for a project, all important environmental impacts are taken into consideration and detailed in Annex III under the 'project presentation format'. All matters that are to be included or excluded in the format are designated. Opinions from public participatory meetings are taken into consideration and a special EIA report format (ToR) is designated.

3.3.3 *Review*

The Review stage is one of the most important stages in the EIA procedure. This phase has been clearly laid down in the EIA Regulation. The most important duties fall upon the 'scoping-review and assessment commission' during the review stage.

The commission evaluates the EIA report and may request the Project Owner/Client to complete any deficiencies that may be necessary. In order to make sound evaluations, the commission also has the authority to go to the site of activity to conduct its investigations.

The matters requiring investigation by the commission during the review stage have been clearly laid down in the Article 12 of the regulation. According to this;

- the EIA report and its appendices are checked for sufficiency and suitability
- it is checked as to whether all investigations, calculations and evaluations are based on sound data, information and documents
- it is checked as to whether a detailed investigation has been conducted concerning all possible impact of the project on the environment
- it is checked as to whether all precautions have been determined concerning possible negative impact of the project on the environment
- it is checked as to whether the public participatory meetings were conducted appropriate to prescribed methods
- investigations and evaluations are made as to whether solutions to the matters discussed are sufficient or not.

The results of all investigations made by members are brought to a conclusion within 30 working days and a signed proceeding is established.

3.3.4 *Public participation*

The public participation (PP) stage is definitely an effective part of the EIA procedure. In particular the PP stage is important in countries like Turkey where official information and documents are hard to attain. There are two different evaluations of the system of PP in Turkey. According to the first evaluation, only the Turkish system requires wide public participation to take place during the review stage and is satisfactory [17]. The second

evaluation on the other hand, considers the effectiveness of the PP specified in the EIA regulations to be weak [23].

Article 9 of the EIA Regulation carries the title of 'public participation'. According to this, a PP meeting is held following the project owner's initial meeting with the commission. The most accessible centre of the local public likely to be most affected by the project is determined. The venue, timings and subject of the meeting are published in a 'national and local' level newspaper three days in advance of the meeting. The meeting is held in the regional environmental head office. The chairman may request that the participants' views and opinions be submitted in written format. The meeting minutes are dispatched to the Ministry. Public opinions are kept in consideration throughout all stages of the EIA procedure.

Another example of PP in the regulations is the stage where the EIA report is presented to the Ministry. After submission of the report to the Ministry, a period is allocated for examination of the report and notification of opinions. These opinions are taken into consideration by the commission.

3.3.5 Decision-making

After preparation of the EIA report and its submission to the MoEF, the final decision stage begins. It is here that the realisation of the activity is given permission or otherwise.

In Turkey, the anticipated decision-making organ of the EIA reports is the MoEF. The authority of the Ministry is stated in Articles 13 and 14 of the regulations as follows;

"The final draft of the EIA report is prepared within five working days following the conclusion of the review and assessment meetings and presented to the Ministry. The Ministry takes into consideration the studies conducted by the commission and decides as to whether the project is 'EIA positive' or 'EIA negative', this decision is notified in writing to all relevant institutions and establishments."

Regarding the projects subject to Annex II, the final authority is the MoEF in examining the Project description file and making the ultimate decision accordingly.

According to Article 17 of the regulations, a report presented to the Ministry is examined and a decision is taken as to whether 'EIA necessary' or 'EIA unnecessary'. In the event that EIA is not required, the project owner must begin investment within a period of five years. In the event that an EIA necessary decision is taken the EIA procedure commences again.

3.4 EMPs, mitigation and monitoring of impacts as a systemic measure

In Turkey, it is not legally compulsory to prepare Environmental Management Plans. The National Environment Action Plan of Turkey dated 1999, covers the importance of the Environmental Management and emphasises the necessity of planning while going over what should be done.

Turkish EIA regulation includes a general requirement for mitigation to be undertaken. This matter has been included among the criteria for the Review and Assessment of the commission. According to this, it shall be investigated as to whether all precautions have been determined concerning possible negative impact of the project on the environment (Article 12/d).

The EIA procedure is not complete once the EIA report has been prepared and the MoEF has taken its decision. It must be inspected as to whether the project that has received investment permission is living up to obligations and designated precautions are being taken. This matter has been clearly stated in Articles 18 and 19 of the EIA Regulation.

The heading given for Article 18 is 'monitoring and auditing of the investments'. According to this, projects that have received investment permission are monitored and audited regarding obligations. Necessary collaboration with relevant institutions and establishments may be done by the Ministry in order to fulfil this objective.

If, at any instance, the project owner behaves contrary to obligations, a period may be given to that project owner to keep his/her promises. In the event that this warning is not needed, the investment is stopped and is not allowed to continue until and unless commitments and obligations are fulfilled.

For those projects that have received acceptance, the investments are expected to commence within a period of five years. If this period expires, permission is withdrawn and the procedure is bound to begin again.

3.5 EIA system implementation monitoring as a foundation measure

There is no provision in the EIA Regulations concerning the need for monitoring. However the General Directorate of EIA and planning within the MoEF is continuing work in this regard. In particular monitoring studies have been done to determine the application date, subject and outcome. This has been given in Table 2 in order to provide a different point of view as to EIA practice. A positive development has been the publication of these results on the Ministry internet website. The results obtained from the table are also very interesting. During the years 1993–2003, of a total of 838 projects, 21 received a negative report.

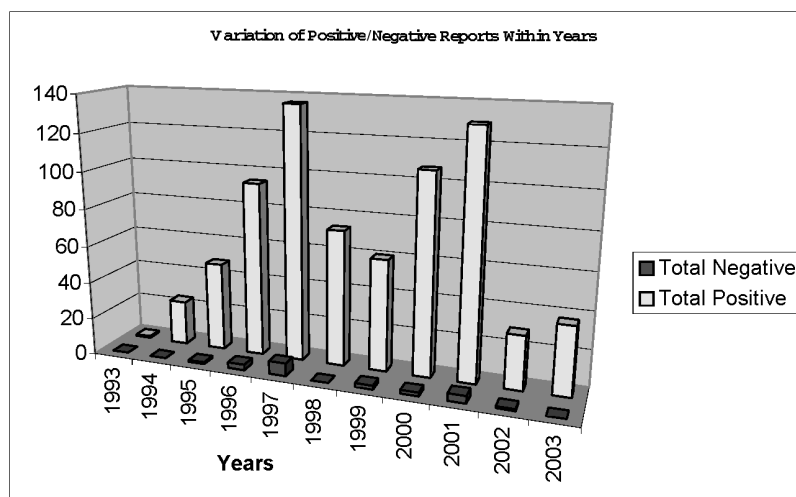
Table 2 EIA reports issued between 1993 and 2003

Years	Decisions	Sectors							Total
		Industry	Energy	Mining and oil	Churn and chemical	Agriculture and food	Transport. and coast	Tourism and settlement	
1993	Positive	1	0	0	0	0	0	0	1
	Negative	0	0	0	0	0	0	0	0
	Total	1	0	0	0	0	0	0	1
1994	Positive	2	3	6	2	2	2	7	24
	Negative								0
	Total	2	3	6	2	2	2		24
1995	Positive	13	3	17	6		3	6	48
	Negative			1			1		2
	Total	13	3	18	6	0	4	6	50
1996	Positive	18	1	43	7	8	9	8	94
	Negative		1	2					3
	Total	18	2	45	7	8	9	8	97

Table 2 EIA reports issued between 1993 and 2003 (continued)

Years	Decisions	Sectors							Total
		Industry	Energy	Mining and oil	Churn and chemical	Agriculture and food	Transport. and coast	Tourism and settlement	
1997	Positive	15	3	70	13	8	7	20	136
	Negative	2		4			1		7
	Total	17	3	74	13	8	8	20	143
1998	Positive	20	4	18	8	5	5	13	73
	Negative								0
	Total	20	4	18	8	5	5	13	73
1999	Positive	15	13	11	4	4	6	7	60
	Negative			2					2
	Total	15	13	13	4	4	6	7	62
2000	Positive	13	23	32	8	5	6	22	107
	Negative			1	1				2
	Total	13	23	33	9	5	6	22	109
2001	Positive	24	24	21	13	26	4	18	130
	Negative	1		1		2			4
	Total	25	24	22	13	28	4	18	134
2002	Positive	23	13	22	22	5	5	14	104
	Negative		1						1
	Total	23	14	22	22	5	5	14	105
2003	Positive	4	8	8	6	5	5	1	37
	Negative								
	Total	4	8	8	6	5	5	1	37
Grand total	Positive	148	95	248	89	68	52	117	817
	Negative	3	2	11	1	2	2	0	21
	Total	151	97	259	90	70	54	117	838

Figure 2 Variation of results of reports



3.6 EIA expertise and training as a foundation measure

According to the old 1997 regulations, the institutions preparing the EIA report and EIA Preliminary Investigation report needed to get the qualifications certificate from the Ministry. Furthermore, a notification had been issued by the MoEF for this end.

Article 27 of the Regulation conveys the title of ‘certificate of competency’. This article says

“the institutions and organisation, which is to prepare EIA report, must obtain an authorisation certificate from the Ministry. Ministry shall publish a notification (a legal notice) to regulate the affairs pertinent to the authorisation certificate.”

So far, no notification has been published. According to the provisional Article 5, no certificate of competency will be required for the companies to prepare EIA report and the individuals to prepare the EIA report are now designated by the authority of the scoping-review and assessment commission until this notification is issued.

On this subject, between the years 1993 and 2003, the institutions authorised to prepare EIA report and report ratios, have been examined. Starting from the first EIA regulation up to this day, the companies that made EIA report are 200 in number. As shown in Table 2, number of the prepared reports is 838, number of positive reports is 817 (97.5%) and number of negative reports is 21 (2.5%). Half of these reports have been made by 16 companies. Consequently, it may be concluded that the number of the companies authorised to prepare EIA report is sufficient in Turkey. When Figures 3 and 4 are taken together, it is seen that distribution of report number over authorised companies is unbalanced and intensified on definite companies.

Figure 3 Comparison of number of companies issuing EIA reports in the last 10 years

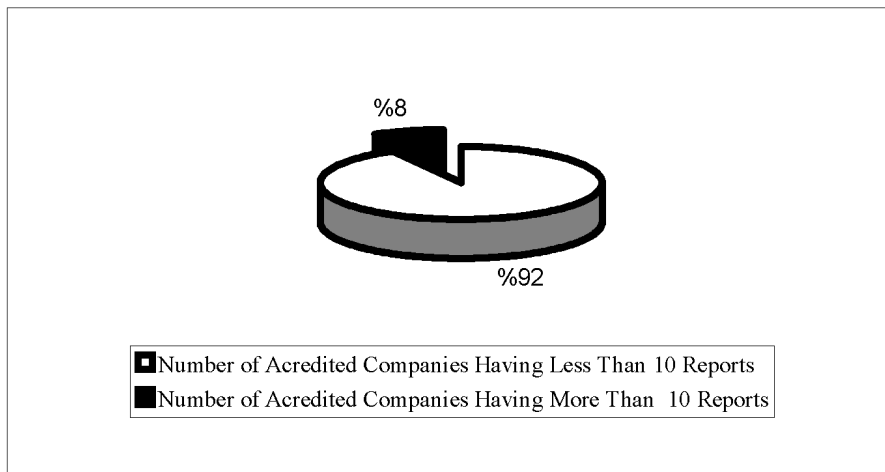
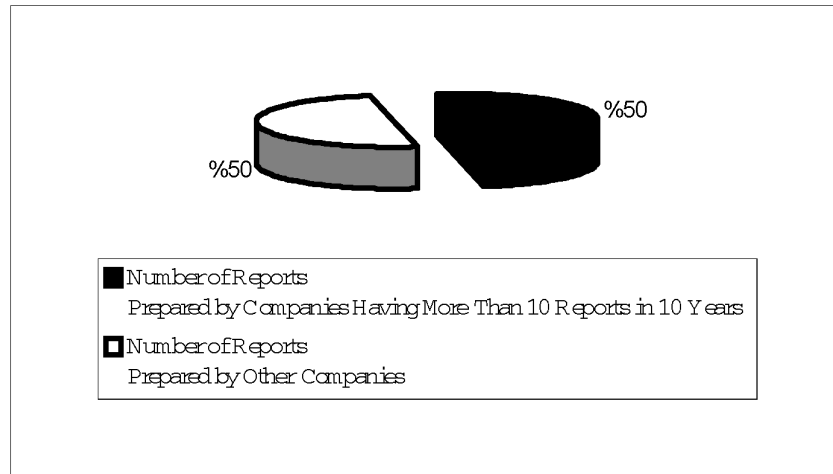


Figure 4 Percentage of reports issued by companies having more than 10 reports in 10 years



It is important that those preparing the EIA report be in possession of a qualification certificate. In this way, the quality of the EIA reports would rise. However, in Turkey, even though there are sufficient competent individuals to work in this field, there is to be seen a deficiency in their training.

Turkey has witnessed a lack of important international funding in this regard. This deficiency in cost resource is a major problem that needs to be overcome.

4 Examples on the application of EIA system of Turkey

In the above chapter, efforts are made both to introduce the logic behind the Turkish EIA procedures and to determine strengths and weaknesses of the system according to systemic and foundation measures. In this respect, it would be helpful to have examples of specific project EIAs that can help to explain some of the problems that arise.

Selected examples are the remarkable events reflected on Turkish media and therefore well known to the public. Naturally, these four events do not represent all EIA applications. However, the areas for which EIA is requested are those that must be protected internationally in terms of the rich varieties of flora and fauna. It is frightening that positive EIA reports for these areas had been issued for the projects named below. Although positive EIA decisions have been cancelled or are to be cancelled by means of court decisions, this time the authority of Ministry is damaged. In other words, Courts found the Ministerial decisions as inappropriate, which made Ministerial decisions about EIA reports questionable. Ministry makes positive or negative decisions with respect to the studies of the commission. The commission is comprised of the representatives of relevant institutions and organisations, project owner and ministerial authorities. This commission, as said above, is authorised to get access to all kinds of knowledge and documents regarding the activities subject to EIA as well as to have the required investigation made. Consequently, the commission has the power to determine the environmental effects of any project. For this reason, Ministry naturally makes the decision on the basis of the commission's evaluation. This implies that the nature of the

commission and the way the commission works is questionable. As it is shown by this limited number of examples, it is not possible to say that EIA procedure in Turkey can operate in a manner to provide full environmental protection. Turkey, as a developing country at the hand of the dilemma of environment or development, sometimes acts in favour of the development. Such a decision naturally becomes the subject of jurisdiction.

4.1 Hydro-electrical power station project at Storm Valley

Storm Valley at Camlihemsin of Black Sea Region constitutes 28% of Turkey's flora. Storm Valley is among the areas that must be protected in Turkey with 537 ligneous plant types, 109 bird species, 23 mammiferous species and 21 reptile species.

Dilek Güroluk company applied to set up a power plant here. In line with the positive EIA report, Ministry of Environment approved the application of the project in 1998. Following this approval, Trabzon Administrative Court cancelled the permission of the Ministry and the EIA report in 1999.

4.2 Can thermal power plant

Can district in the boundaries of Canakkale (Dardanelles) province is known as the place where gods came from Mount Olympus to play harp according to mythology. The region having 70 endemic species is one of the places that are under protection in the world in terms of the varieties of species. In addition, the thermal power plant is only 8 km away from the earthquake faille. In line with the positive EIA report, Ministry of Environment approved the application of the project. 24 NGOs in Canakkale sewed the Ministry of Environment to cancel the permission of the Ministry and the EIA report. The case still continues.

4.3 Hatay airport

Construction of an airport was intended within the boundaries of Hatay province, Southern Turkey. A positive EIA report was issued and the Ministry approved the project. However, ornithologists and environmental specialists objected to the decision and permission pointing out that this area is just on the immigration line of the birds. Upon the objections, the Ministry reevaluated the project and approved the project if and only if necessary precautions are taken to protect the immigrant birds and their immigration lines.

4.4 Koc university

The Koc Foundation applied for permission to settle a university campus in a state forest in Istanbul, although according to Turkish Forest Law, construction is prohibited within the forest unless there is an obvious benefit for the public [24]. Besides the subject of 'public benefit' is still in discussion in Turkey [25,26]. Following the positive EIA report, the Ministry approved the project. The Ministry was sued at the Second Istanbul Administrative Court because of this permission. Second Istanbul Administrative Court cancelled the permission of the Ministry. This decision of the Second Istanbul Administrative Court was then approved by the Turkish Constitutional Court who cancelled the relevant provision of Forest Law as well. However, the university

completed the construction, the President of the Republic of Turkey was present at the opening ceremony of the university despite the decision of a court in Turkey. The university is still in the forest campus and continues its activities.

5 Conclusion and recommendations

It is mandatory that Turkey, with its young population and fast-paced growth, protect and develop its environmental values. Due to its biological diversity, Turkey's environmental protection movements are as important to the world as they are for Turkey. The EIA procedure is an important means for the protection of the precious environment.

Even though Turkey has been applying these means for the past ten years, there are still some aspects that need development. Once these aspects are improved they will be applied much more efficiently. The hindering aspects of the EIA procedure and solution proposals may be enumerated as mentioned below;

- The scoping-review and assessment commission is a very important part of the EIA procedure. The final decision by the Ministry is made based on the work of the commission. Therefore, the structure and working of the commission is of utmost importance. It is mandatory that this auditing unit be an independent institution, however, this is not possible due to the presence of a Ministry representative in the capacity of chairman.
- Public participation is the key to the EIA procedure. It is important that notifications and announcements are done properly and conclusions are evaluated well. However, the effectiveness of this procedure has been reduced in the new regulation. For the projects those are the subject of Annex II, the necessity of Public Participation is cancelled. Notification timing and means are insufficient. All necessary methods should be applied to provide for the participation of the public. Invitation of relevant individuals and institutions may instigate participation. There is no provision regarding the reflection of the public participation on the Ministry decision, it suffices to say that opinions have been taken into consideration. The lack of reflection of PP on the Ministry decision will render the decision as being of no importance.
- As opposed to the actual projects of EIA, for the projects subject to Annex II, the procedure has a lack of an expert commission. After the preparation of project description file, it is sent directly to the Ministry for decision. This is an important deficiency.
- A coordinated effort between all agencies involved would enable the country to pursue the path of sustainable development through the development and application of assessment. In Turkey, there is a lack of coordination among the agencies involved in EIA. A number of agencies are involved in environmental assessment and have developed their own guidelines.
- Particularly for developing countries, the SEA is of great importance; however, there is no provision for this in the regulation.
- It has been left to the commission to select the individuals who will prepare the EIA report.

- Just as much as the EIA report should be prepared objectively, the decision must also be made in a similar regard. The presence of individuals in the report evaluation and decision-making from the same institution (MoEF) is an indication. For cancellation of EIA report by means of court decision indicates the necessity for inspection of these decisions.
- During the preparation of the reports in the EIA procedure, an inventory of the environmental presence should be prepared and data should be accessed with reference to this. Lack of scientific and trustworthy data and baseline information is a major deficiency for Turkey.

Solution proposals

- The EIA final decision of the Ministry is based on the report of the commission. The project owner should not be a member of the commission. The Ministerial representatives should be less in number and they should be performing only coordination functions without the right to vote. Furthermore, the participation of representatives from professional organisations, universities and representatives from trade union associations to the commission as natural members is of utmost importance. In this manner, the commission will gain an independent structure and so its decisions will be more objective.
- Public participation is very critical for EIA procedure. In this respect, current provisions must be strengthened. PP procedures must be applied for the projects subject to Annex II. Notifications that are expected to be done prior to meeting should be carried out in a more intensive and longer manner. Public should know that their opinions will certainly be heard. For this reason, a clear provision must be placed in the regulation.
- For the projects that are the subject of Annex II, commission evaluation is not needed. As it is seen in Box 1, Annex II contains investments that may have significant adverse environmental effects. Just as in the EIA reports, a group of experts should also be appointed as if a commission for this procedure.
- Within EIA procedure, coordination between relevant institution and organisations must be strengthened. Especially, inclusion of NGOs into this procedure should be ensured. A way to assure this is to have representatives of NGOs in the commission.
- Although Strategic Environmental Assessment (SEA) is a very critical issue, it is not mentioned in the regulation. Despite the fact that SEA is explicitly underlined in the foundation law of MoEF, and the duty to carry out SEA is given to the EIA General Directorate of MoEF, this subject should be clearly regulated within the scope of the EIA Regulation.
- Maximum attention should be paid in determining the institution and organisations authorised to prepare EIA report. It should be clearly specified which occupational groups must be present and none of experts of natural sciences should be excluded. The minimum qualifications required for these persons should be clearly designated. Furthermore, candidates fulfilling such requirements should be strengthened with training in order to receive a mandatory certification. Institutions should be trained on this subject before obtaining the authorisation certificate.

- As seen in Table 2, EIA reports in Turkey have the favourable results at the ratio of approximately 97.5%. This is considerably and questionably a high ratio. Considering the EIA reports that were cancelled by means of court decisions strengthens the idea that these reports are questionable. As an inspection mechanism for this purpose, there is a need for an independent control group after the decision of the Ministry. An Ombudsman type of auditor may be proposed, but in Turkey where such an auditing party is not legally obliged clearly indicates that such a proposal shall remain so [16].
- A healthy result of an EIA report depends on a reliable database. Otherwise, differences and contradictions between different reports may arise. In addition, this database is also necessary for land use planning which is not practised in Turkey in its full sense. The specifications and land type should be known for an investment to be based on and then associated operations should be initiated accordingly. For this reason, environmental database should be prepared urgently and this dependable information should be provided for access and use.

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