Quality Evaluation of İskele/TRNC Projects' Environmental Impact Assessment Reports and their Compliance with European Union EIA Report Standards

Necip Caner

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Approval of the Institute of Graduate Studies and Research

Prof. Dr. Ali Hakan Ulusoy
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science in Civil Engineering.

Assoc. Prof. Dr. Eriş Uygar
Chair, Department of Civil Engineering

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Civil Engineering.

Prof. Dr. Umut Türker
Supervisor

Examining Committee

1. Prof. Dr. Özgür Eren

2. Prof. Dr. Hüseyin Gökçekuş

3. Prof. Dr. Umut Türker

ABSTRACT

Any construction project can negatively affect the surrounding environment, biodiversity, and human beings. Their effects can be identified, mitigated, and eliminated. Thus, it is clear how crucial the Environmental Impact Assessment (EIA) procedure is. As it defines a project, the EIA Report is an important step in the process of EIA. It assesses environmental and social impacts, applies mitigation measures, management, monitoring plans and alternative solutions. Consequently, in order to fulfill all the above-mentioned factors, the EIA reports prepared for construction projects in İskele/TRNC district must have qualified EIA reports in order to provide sustainability for the environment and biodiversity.

The EU EIA process, being a legitimate procedure, has determined the aim of this study to evaluate the quality of selected five projects' EIA reports from İskele/TRNC district and compare their quality with the EU EIA Report standards. Both the overall and section qualities for the selected reports have been identified and compared to EU EIA Report standards by the selection of review checklist questions given in EU EIA Report guidance and by using the "Quality Index" (QI).

The findings showed that the overall and each section's quality within the selected EIA reports did not comply with EU EIA Report Standards indicating that improvement is inevitable for EIA reports. It has been recommended that certain improvements can be made by authorities creating an updated checklist influenced from the EU EIA Report Standards and applying it to local EIA reports. This process could positively affect the

quality of İskele/TRNC Projects' EIA reports to sustain the environment and biodiversity for a better future.

Keywords: Environmental Impact Assessment, Environmental Impact Assessment Report, European Union EIA Report Standards, Review Checklist Questions, Quality Index, Overall and Section Quality

ÖZ

Herhangi bir inşaat projesi çevredeki ortamı, biyolojik çeşitliliği ve insanları olumsuz etkileyebilir. Bunların etkileri tanımlanabilir, azaltılabilir ve ortadan kaldırılabilir. Dolayısıyla, Çevresel Etki Değerlendirmesi (ÇED) prosedürünün ne kadar önemli olduğu açıktır. Bir projeyi tanımladığı için ÇED Raporu, ÇED sürecinde önemli bir adımdır. ÇED raporu çevresel ve sosyal etkileri değerlendirir, etki azaltıcı önlemler, yönetim, izleme planları ve alternatif çözümler uygular. Sonuç olarak, yukarıda belirtilen tüm faktörlerin yerine getirilebilmesi için İskele/KKTC bölgesindeki inşaat projeleri için hazırlanan ÇED raporlarının çevre ve biyoçeşitlilik açısından sürdürülebilirliği sağlayacak nitelikli ÇED raporları olması gerekmektedir.

AB ÇED sürecinin meşru bir prosedür olması, bu çalışmanın amacını İskele/KKTC bölgesinden seçilen beş projenin ÇED raporlarının kalitesini değerlendirmek ve kalitelerini AB ÇED Raporu standartlarıyla karşılaştırmak olarak belirlemiştir. Seçilen raporların hem genel hem de bölüm kaliteleri belirlenmiş ve AB ÇED Raporu kılavuzunda verilen inceleme kontrol listesi soruları seçilerek ve "Kalite Endeksi" (QI) kullanılarak AB ÇED Raporu standartlarıyla karşılaştırılmıştır.

Bulgular, seçilen ÇED raporlarındaki genel ve her bir bölümün kalitesinin AB ÇED Raporu Standartlarına uymadığını göstererek ÇED raporları için iyileştirmenin kaçınılmaz olduğunu ortaya koymuştur. Yetkililerin AB ÇED Raporu Standartlarından etkilenerek güncellenmiş bir kontrol listesi oluşturması ve bunu yerel ÇED raporlarına uygulaması yoluyla bazı iyileştirmeler yapılabileceği tavsiye edilmiştir. Bu süreç, daha

iyi bir gelecek için çevre ve biyolojik çeşitliliğin sürdürülmesi amacıyla İskele/KKTC Projelerinin ÇED raporlarının kalitesini olumlu yönde etkileyebilir.

Anahtar Kelimeler: Çevresel Etki Değerlendirmesi, Çevresel Etki Değerlendirmesi Raporu, Avrupa Birliği ÇED Raporu Standartları, Kontrol Listesi İnceleme Soruları, Kalite Endeksi, Genel ve Bölüm Kalitesi

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LIST OF ABBREVIATIONS

EC	European Commission
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EU	European Union
IEE	Initial Environmental Examination
NEPA	National Environmental Policy Act
QI	Quality Index
SEA	Strategic Environmental Assessment
TOR	Terms of Reference
TRNC	Turkish Republic of Northern Cyprus
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
US	United States
WB	World Bank

Chapter 1

INTRODUCTION

1.1 Introduction

Environmental awareness specially by civil engineers in today's global construction world is swiftly increasing. Any type of project or plan right now needs to have a well-planned and fulfilling environmental impact assessment (EIA) to maintain the balance between nature, living beings and human constructs. To fully examine the sustainability of any civil infrastructure, it is necessary to consider its environmental impact (Hossain and Gencturk, 2016). A prospering Environmental Impact Assessment (EIA) enables one to effectively support the social, cultural, environmental, and economic sectors of sustainability (Sciberras, 2013).

The primary goal of an EIA is to acquaint the decision makers on the potential environmental effects for their preferences. This is crucial to make sure that solely appropriate development takes place. To do this, EIA offers the procedures for development proposals to be changed as needed and potential negative impacts to be lessened (Jay, Jones, Slinn and Wood, 2007). Reducing the potential negative impacts for the surrounding environment, animals and people alike plays a crucial role for an efficient construction project. The created document that tenders the results of the evaluation is the EIA Report. It includes details on the project, its potential major effects, the baseline scenario, alternative proposals, properties, and precautions to

lessen negative effects, and a non-technical summary (Guidance on the preparation of the Environmental Impact Assessment Report, 2017).

The coastal ecology may suffer from projects that are poorly designed and develop at a rapid and uncontrolled rate. By executing initiatives based on incomplete knowledge or inaccurate analysis of the baseline data, human action in the coastal zone runs the risk of negatively effecting this equilibrium. The stratosphere, terrestrial, and marine ecosystems all have an impact on the coastal zone, which is quite dynamic. These kinds of ecosystems are also very delicate, and changes with the shoreline could upset the balance between sea and land, having an impact on the world physically, biologically, and environmentally, as well as on society and the economy. As a result, it could be required to modify the original idea, find alternative solutions, and mitigate the damage (Frihy, 2001).

Islands' maritime coastal regions are significant because they have ecosystems that directly affect the island's economic resources. As these coastal regions sustain the coastal fish and crustacean supplies, they are important to the economics of the islands since they have been exploited extensively for industrial, artisanal, and semi-industrial purposes on some islands. Marine and coastal habitats and their ecosystems have been severely affected by coastal development as well as pollution from land and development activities including agricultural and constructional operations (Gobin, 2001).

Buildings are a component of the infrastructure; nevertheless, throughout their construction, usage, maintenance, and demolition, they use and demand other components of the infrastructure as well as land, water, raw materials, and energy. As

a rule, buildings have directly affected the environment as well as indirectly through the usage of goods and services throughout the course of their long-lasting life cycle (Trinius, 1999). EIA systems in developing nations differ greatly from those in developed nations, just as there are also differences among themselves with different systems of EIA within developed or developing nations (Wood, 2003).

1.2 Research Problems, Objectives, and Questions

Ecosystems in the Mediterranean have unique traits that set them apart from other coastal seas in Europe. These traits are distinguished by a particular future of physicochemical and biological cycles that have an impact on all facets of ecological processes (European Environment Agency, 2006).

The fundamental elements of EIA protocols and the execution quality differ between countries and occasionally between projects. However, different kinds of issues frequently prevent the proper application of EIA. These issues include national or local regulations that are specific to EIA, poor assessment report quality, the absence of instructed personnel and equipment, an ineffective institutional structure, an absence of public involvement, and poor policymaker, investigator, and stakeholder solidarity. (Ertan and Ertan, 2006).

Reporting is an essential part of the EIA process since it provides information for making decisions and allows for the communication of the assessment's results and recommended mitigation measures. An EIA report should be thorough, understandable, accurate, impartial, and consistent within itself. It is difficult to achieve these aims in a process with several participants, a wide range of repercussions and mitigation techniques, and numerous approaches. As a result, it is crucial to allot

appropriate time on behalf of drafting an EIA report so that plenty of time would be present to consider the results of every EIA phase (Learn - step 5: The EIA report, 2022).

An important point that must be expressed within this study is that it was problematic to find information about the EIA process within TRNC even though there is an existing EIA Regulation of the country. Additionally, to access and obtain the EIA reports of projects in İskele/TRNC was insufficient and difficult as well.

İskele is a district of TRNC that is in a coastal region and is rapidly growing in the means of construction sector such as residences, hotels, restaurants or cafes, houses, and coastal structures. Coastal structures are capable of changing the nature of waves and thus alter the foreshore and offshore beach profiles (Kabdaşlı and Türker, 2002; Riazi and Türker, 2017; Riazi, Türker and Slovinsky, 2022).

The development of an environmentally rich area which attracts tourists and local people alike must be done so by applying the right and sufficient regulations related with EIA, sustainability can be achieved both for the environment and biodiversity. Improving the quality of İskele projects' EIA reports would surely help the cause of having a better future for the region in all aspects. TRNC could benefit from the EU Environmental Law and consider improving Environmental Impact Assessment regulations for a better outcome.

This study's objectives aim to be the overall and sectional quality evaluation of İskele/TRNC's 5 coastal region projects' official EIA reports, their compliance with European Union EIA report standards. Furthermore, highlighting the

recommendations that could be applied for improving the EIA report quality for TRNC based projects.

Research Questions:

- *Does the overall quality of the chosen five projects' EIA Reports from İskele/TRNC comply with European Union EIA Report quality standards*?
- *Is each section's quality for the chosen five projects' EIA reports in compliance with EU EIA Report section standards' requirements?*

Once the EIA reports written in TRNC get influenced by EU EIA report standards for projects such as the selected ones in İskele, the better quality of local EIA reports and a sustainable environment/biodiversity could be achieved.

1.3 Research Approach and Methodology

The research approach consists of qualitative and quantitative elements that lead to mixed approach towards İskele/TRNC Projects' EIA reports, the existing EIA process in TRNC, European Union EIA and its report standards, and the importance of EIA process and report. Methodology consists of evaluating the quality of five selected İskele/TRNC Projects' EIA reports which are secondary data and checking if they follow EU EIA report standards. Collection of the review checklist questions from EU guidance on how to prepare EIA report has helped this study to compare local EIA reports with EU EIA report standards. The method that enabled this compliance check and quality evaluation of selected reports was "Quality Index" (Naser, 2015; Soderman, 2005; Khera and Kumar, 2010). Finally, recommendations for an improvement of the existing processes would also be included within this research study.

1.4 Thesis Structure

After the introduction chapter to the topic, definition for research problems and objectives, and explanation for research approach and methodology, literature review chapter would be followed. Regarding the thesis subject, there are general and specific information within literature review part. Research methodology is the next chapter that provides an extensive explanation of research method, approach, and procedures. The next chapter would be data analysis chapter, where all the secondary information and data that has been gathered in this study is evaluated and compared then responded the research questions with recommendations. The last chapter of this thesis is the conclusion where this study is concluded with summarized information for the whole research, methods, results, and recommendations that reflects the overall process.

Chapter 2

LITERATURE REVIEW

2.1 Origin of EIA

More than 100 nations worldwide have adopted themselves to apply the requirements of EIA reports over the past 60 years. EIA's philosophy and guiding principles can be linked towards rationalist choices methodology that first appeared around the year 1960. To make an impartial choice, it is necessary to conduct a technical evaluation as stated by Owens S, Rayner T and Bina O (2004). Several assessment or valuation methods have been developed using this "technical-rational" concept (Petts, 1999); Undoubtedly, EIA is the one of these that is the most generally known and used. The United States NEPA (National Environmental Policy Act) of the year 1969 served as the foundational piece for its robust legislative framework.

The US Congress applied the NEPA at a period during the notable environmental harm brought on by a variety of activities of humans became more and more obvious, the focus of escalating worry among people, and political engagement, particularly in liberal democracies (Jay, Jones, Slinn and Wood, 2007). The worldwide repercussions of the spike in environmental concern that drove NEPA's passage were more extensive, and they eventually produced the Stockholm UN Conference about Environment in the year 1972. In this case, the issues of exploding growth, pollution, and devastation of the natural surroundings that NEPA was planned to address were thought to be global (Jay, Jones, Slinn and Wood, 2007).

EIA was formed in a European Directive in 1985, and as a result, EIA legislation was adopted by many European nations (Glasson et al. 1999: 37). Following the European Council of Ministers' adoption of Directive 85/337/EEC in 06/1985, Environmental Impact Assessment has been implemented within the Member States of the EU in 07/1988. As Lee stated (1995), one key aspect of the European EIA procedure is the fact that it is structured as a system of law, giving Member States slight discretion in carrying out the Directive.

Multiple times, in the years 1997, 2003, and 2009, it was revised to present the EU's international obligations under the Espoo and Aarhus Conventions as well as changes to other environmental legal frameworks. In 2011, Directive 2011/92/EU, a single legislative document that consolidated the initial EIA Directive and its three following revisions, became effective. The Commission put forth a proposal to change the codified Directive in 2012. With emerging challenges like changes in the climate, biological diversity, preventing risks, and efficient use of resources in mind, the proposal sought to address some implementation flaws, lessen the needless administrative burden, streamline the assessment process, and increase how well the environment is protected. 2014 saw the adoption of the amending Directive 2014/52/EU, which became effective in 2017 (European Commission, 2021).

2.2 Definition, Purpose, and Objectives of EIA

The expression "environmental assessment" describes a procedure by which information on the possibilities of a project's environmental effects are collected, either directly from the developer and from additional sources and taken into account by the planners when determining whether to proceed with the development. The definition provided by UNECE (1991) was much shorter and pithier: "An evaluation

of the environmental effects of a planned action". Before development approval is granted, particular private and public projects that are expected to possess a substantial impact on the environment must undergo an assessment under the EU EIA Directive (Glasson, Therivel and Chadwick, 2012).

The immediate purpose of EIA, that results from these efforts is to notify those making decisions on the possible environmental impacts of their decisions. This is carried out to ensure that only appropriate development takes place. To do this, EIA offers the procedures for development proposals to be changed as needed and anticipated negative impacts to be lessened. Although EIA may force the withdrawal of some proposals, its main emphasis is on mitigating any negative environmental effects that are expected to occur (Jay, Jones, Slinn and Wood, 2007).

The objectives of any EIA report are summarized by Bartoszewicz and Burchart (2019) in which participation of people, fulfillment of environmental requirements, minimized hazards to environment and uniformity in all regions were the main criteria as given in Figure 1.

Figure 1: Environmental Impact Assessment (EIA) objectives (Bartoszewicz and Burchart, 2019)

2.3 Law, Policy, and Institutional Frameworks for EIA Systems

Directive on EIA from the European Commission (EC) (1985, revised in 1997). The EIA Directive serves as a guide regulation which all the member nations must abide with. It lays forth the guiding principles and operational standards for EIA throughout the EU while having the member states' control of how they are translated towards domestic law (UNEP, 2002).

UNEP (2002) has stated that "EU Directive conditions of EIA: The present EIA Directive of 97/11/EC updates the previous EIA Directive of 85/337/EEC. The main features involve: a wide range of explanation of the effects to be taken into account; an obligatory implementation for certain projects; the need for providing an EIA document; kinds of data that need to be supplied by planners; a summary of the different options investigated and explanations; an application that has to be accessible for public opinion; the outcomes about discussions as well as data needs to be utilized

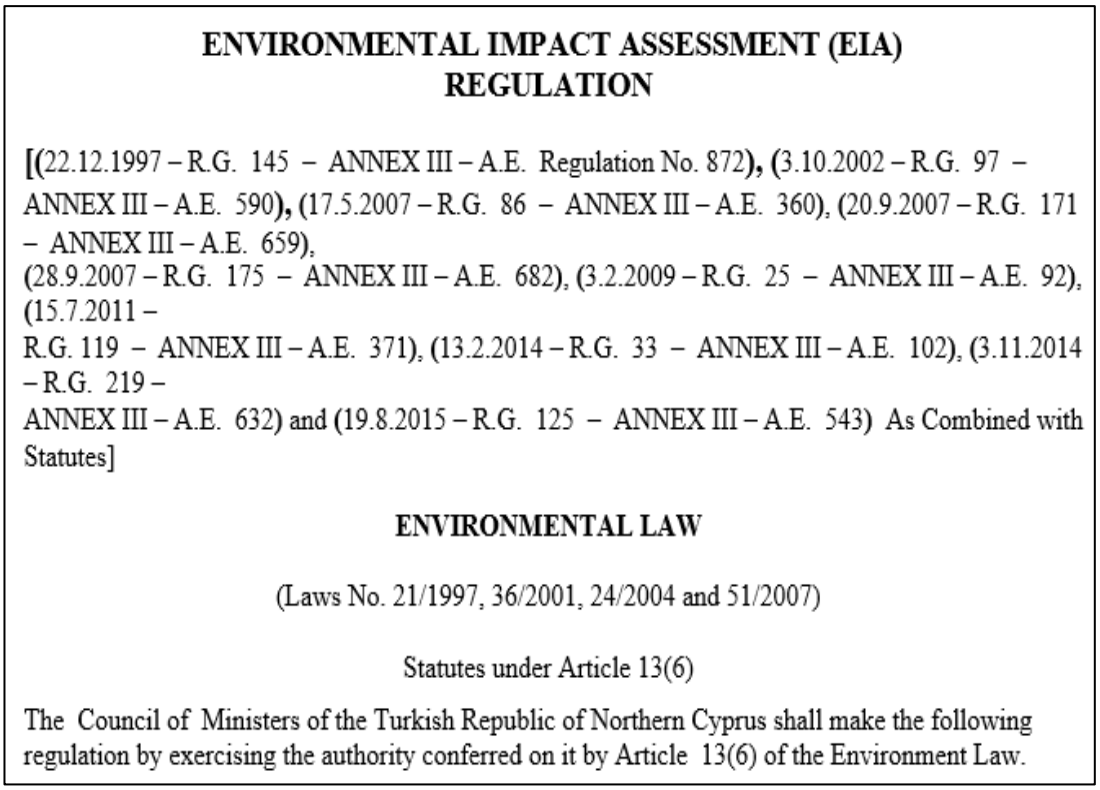
into account in making choices; the details and motives behind choices to be made public and specific setup for public participation."

The first multi-lateral EIA treaty was the Espoo Convention on EIA by UNECE in a transnational context, that was enacted in the year 1991 and took effect in the year 1997. This outlines the obligations of validator nations regarding proposals that have transboundary effects, explains the rules and processes to be followed, and enumerates the relevant actions, documentation requirements, and significance standards. The geographic area of UNECE has numerous transitioning Eastern as well as Central European nations among its signatories for the convention. The convention has been essential in making EIA agreements stronger (UNEP, 2002).

EIA regulations as well as procedures concerning growth banks continue to be crucial, particularly in nations with inadequate or non-existent domestic EIA policies and procedures. The World Bank (WB) made several improvements to its EIA method to make the use of it more systematic, most notably by linking it to new environmental and social safeguard policies (UNEP, 2002).

2.4 Law of Environment, Development Plan and EIA Regulation of TRNC

The "Law of Environment" (Law Number 21/1997) of TRNC is a legislation that supports growing sustainably. Growing sustainably includes investment and development strategies that are intended to promote both economic expansion and environmental protection. The procedures that must be followed principally concern environmental and natural resource policies that consider the ideas of "sustainable development" (Yorucu and Keles, 2007).



ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATION

[(22.12.1997 – R.G. 145 – ANNEX III – A.E. Regulation No. 872), (3.10.2002 – R.G. 97 – ANNEX III – A.E. 590), (17.5.2007 – R.G. 86 – ANNEX III – A.E. 360), (20.9.2007 – R.G. 171 – ANNEX III – A.E. 659), (28.9.2007 – R.G. 175 – ANNEX III – A.E. 682), (3.2.2009 – R.G. 25 – ANNEX III – A.E. 92), (15.7.2011 – R.G. 119 – ANNEX III – A.E. 371), (13.2.2014 – R.G. 33 – ANNEX III – A.E. 102), (3.11.2014 – R.G. 219 – ANNEX III – A.E. 632) and (19.8.2015 – R.G. 125 – ANNEX III – A.E. 543) As Combined with Statutes]

ENVIRONMENTAL LAW

(Laws No. 21/1997, 36/2001, 24/2004 and 51/2007)

Statutes under Article 13(6)

The Council of Ministers of the Turkish Republic of Northern Cyprus shall make the following regulation by exercising the authority conferred on it by Article 13(6) of the Environment Law.

Figure 2: Environmental Impact Assessment (EIA) Regulation and Environmental Law of TRNC (KKTC Mahkemeler, 1997)

Additionally, it has been stated by City Planning Department – Ministry of Interior Nicosia - Turkish Republic of Northern Cyprus that "Pursuant to Article 8(1) of the Development Law 55/1989, a Development Plan (Imar Planı) is a plan for the development of any town or smaller settlement or an area comprising more than one settlement" (Gazimağusa - İskele - Yenıboğaziçi İmar Planı, 2019).

Environmental law can be summed up as a body of research intended to safeguard environmental values by establishing legal protections. It is a highly important marker of the path of regulation that is open to development and change. TRNC must reshape its environmental policy by following the EU Environmental Law principles and restructure the Environmental Law legislation and practices as a country that has close ties to the EU (Ertan and Ertan, 2006).

2.5 European Commission Coastal Zone Policy

A collaborative strategy for coastal territorial planning as well as unified coastal control was introduced on 12/03/2013 by the Commission. The suggestion, presented in in the shape of an initial instructions, seeks to create a setting for integrated coastal management and maritime spatial planning in the member states of the EU in order to support the development of sea and coastline activities in a way that is both environmentally friendly and promotes the responsible exploitation of marine and coastal assets. According to the suggestion, Member States must make sure to have the notes of marine activity by humans, determine their most advantageous future spatial development, and coordinate pertinent policies impacting coastal areas in integrated coastal management strategies. Coastal management and maritime spatial planning must adopt a strategy that respects ecosystem boundaries in order to guarantee the maintainability and healthy environment of the diverse use of both the coastal and marine locations. It likewise involves evaluating objectives and approaches in conformity with Directive 2001/42/EC's systemic environmental analysis guidelines. The relationship between land- and sea-based activities will be improved by the coordinated use of marine territorial planning along with combined coastal control (Directive Proposal - Coasts - Environment - European Commission, 2022).

Two important policy axes have emerged in recent years. First and foremost, environmental goals must be consistently incorporated into economic growth. Second, in the interests of subsidiarity and collaboration, regional and territorial planning issues must be considered at the European level. Therefore, the Union and the Member States must take specific cooperative action to increase the efficacy of the law as well as the

currently available budgetary and planning mechanisms (Coastal Zone Policy - Environment - European Commission, 2022).

2.6 Guiding Principles of EIA

According to M. Sabeva (2015), numerous fundamental concepts serve as the foundation for the whole EIA process:

- Involvement – The entirety of stakeholders involved in the process ought to be given complete prompt accessibility.
- Openness - The assessment choices have to be made with full disclosure of the factors that went into them.
- Safety - Everyone taking part must adhere to the assessment technique and time limit that have been previously decided upon.
- Responsibility - People making decisions are in charge of making the right moves and choices during the evaluation procedure.
- Reliability - The review ought to be conducted in an ethical and unbiased manner.
- Economic Efficacy - The analysis method and outcomes ought to deliver environmental safeguards with the least expensive feasible way for the community.
- Adaptability - The method of assessment must be ready to adjust to new suggestions and circumstances that arise in the course of the review and deal with them in an efficient manner.
- Feasibleness - Data and findings from the procedure of assessment need to be simple to utilize in preparing and executing choices.

2.7 Stages of the EIA Process

International environmental policies are developed, put into action, and evaluated with active participation from the EU and United Nations Environment Programme (European Union and UNEP, 2022).

The EIA Instruction Files, titled Screening, Scoping, and Environmental Impact Statement (EIS) Review, were released by the European Commission. The mentioned publications were modified and altered to keep up with the most recent version of standards of excellence as well as the modifications to the law that have occurred following the initial instruction files were published (Guidance on the preparation of the Environmental Impact Assessment Report, 2017).

Typical stages and actions involved in preparing an EIA are summarized in Figure 3 and Figure 4:

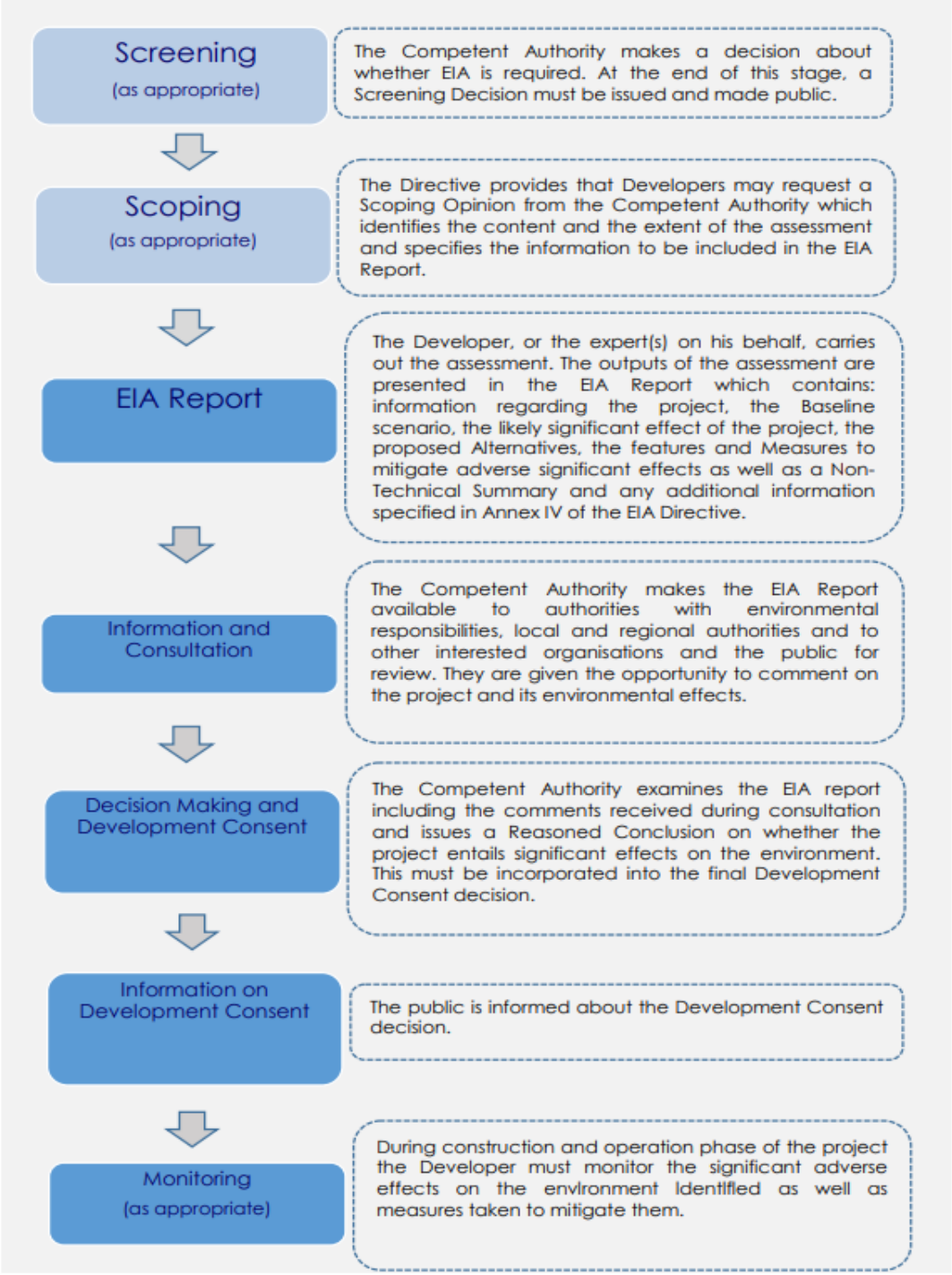


Figure 3: Stages of EIA process (Guidance on the preparation of the Environmental Impact Assessment Report, 2017)

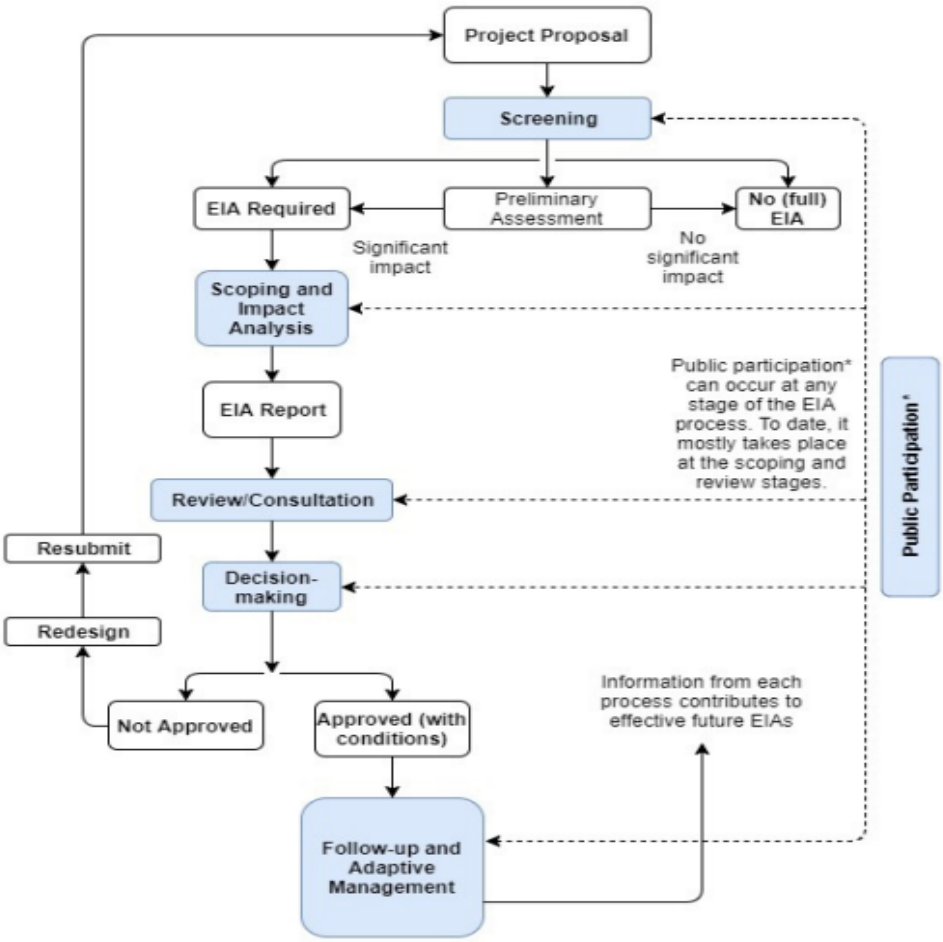


Figure 4: Generalized EIA process flowchart (UNEP, 2002)

2.7.1 Screening

European Union, Guidance on Screening (2017) stated that "The main goal of screening aims to ascertain if a project necessitates an EIA. By guaranteeing that solely projects for which it is believed that a major effect on the natural world is feasible are subject to screening, which then results in effective utilization of exclusive and public resources. Therefore, it is important for screening to balance the two goals mentioned earlier". The review of a suggestion determines if an EIA is necessary along with, when that's the case, during which phase of investigation. It makes sure that every aspect of the EIA can be executed with confidence and transparency, without requiring unnecessary review or missing to adequately take note of proposals that

require close examination. Screening is the initial phase of the entire EIA procedure. The vast majority of any action and project which is related with EIA necessitate any form of screening implementation. Screening is done to separate out the plans that need an EIA from those that don't. It aims to make sure that any EIA review is conducted in a manner or at a degree appropriate to the significance of the issues it raises (UNEP, 2002).

According to United Nations Environment Programme (2002): One of the following results can arise from the screening procedure:

- Additional EIA stage is not necessary.
- An exhaustive as well as thorough EIA is necessary.
- It is necessary to conduct an additional constrained EIA, sometimes known as a preliminary evaluation.
- The needed degree for an EIA must be determined by additional research. This procedure is known as IEE which can be expanded as "Initial Environmental Examination".

2.7.2 Scoping

According to European Union, Guidance on Scoping (2017) “Scoping's goal involves determining the topics that shall be included within developer's EIA document before it is presented for review by a responsible department, as well as especially, determining the topics that are particularly crucial to ensure that they are able to be handled in a deeper manner. Within an EIA document, scoping ought to guarantee that every pertinent problem has been acknowledged and discussed. Furthermore, it enables the procedure to neglect any redundant problems”.

Scoping is an important, initial point for creating an EIA document. Scoping stage

finds out the problems which potentially are important and removes those that are not as important. The procedure called Terms of Reference which can be quoted as “TOR” and used as to create an EIA often marks the end of Scoping phase. Scoping helps the EIA progress to be focused on the important aspects while preventing time and resources from being lost on pointless research. Scoping is the term used to indicate the promptly, explicit, and collaborative approach to defining the most important issues and repercussions that need to be included in an EIA progress for the purpose of guiding decision makers regarding the suggestion (UNEP, 2002).

According to European Union, Guidance on EIA Scoping (2001), there are certain important points that must be addressed when a responsible institution or developer applies scoping:

- The potential environmental impacts that the project can have.
- Identification of these environmental impacts and requirement of special focus for the most important ones.
- Different possibilities and reduction strategies that are being considered while forming the project's suggestions.

Numerous alternative approaches to scoping have been created, but the majority start with matrices and checklists as its fundamental tools since they offer a methodical manner to consider potential interactions between a project and its surroundings (European Commission, 2001). The most often used legit approaches for defining the impacts consist of consultations, checklists, networks, and matrices (UNEP, 2002).

Additionally, information must be given about Terms of Reference (TOR), which is also crucial within scoping step. According to Babu (2016), TOR is a document that

should be prepared by the responsible person or institution that carries out the EIA progress. It is a process involved in Scoping and a very prominent phase within the progression of EIA as it sets the subject matter's rules of conduct.

2.7.3 Impact Analysis

UNEP (2002) states that “Impact analysis is the scientific backbone of the EIA system”. Important impact analysis steps which are carried out as a component of the procedure for EIA consist of:

- Determining; finding out the effects that are connected to each stage of the project as well as the actions implemented.
- Estimating; presupposing the primary impacts' type, size, scope, and lifespan.
- Assessing: evaluating the magnitude of any leftover effects.

Determining the effects and forecasting takes place in relation to an environmental initial state, which is frequently defined by particular indexes and markers. Through screening and into scoping, initial information as well as pertinent biophysical and social-economic variables are gathered. In addition, further initial information will frequently have to be gathered in order to create points of reference for determining and forecasting impacts and the Terms of Reference (TOR) ought to state these conditions. The kind of information collected for baseline data has been mentioned by UNEP (2002) as “While creating a starting point, data is collected about the following topics: existing circumstances in the environment, present and anticipated tendencies, implication of existing suggestions, and finally, implications of reasonably predictable suggestions”.

2.7.3.1 Characteristics of Environmental Impacts

As per the statement within UNEP (2002), typical factors to be considered when predicting impacts and making decisions contain:

- Type
- Intensity
- Size and position
- Moments
- Period
- Transposable
- Probability
- Importance

2.7.3.2 Impact Prediction Methods

UNEP (2002) has stated that “The following techniques can be used to anticipate an impact's traits:

- "The most effective guess" expert opinion;
- numerical arithmetic paradigms;
- tangible structures and tests;
- Investigations used as examples or benchmarks.”

2.7.3.3 Uncertainty in EIA

At every stage within the EIA procedure, uncertainty is an important problem, but impact prediction is where it matters the most. Simply said, precariousness represents a condition of limited understanding and unawareness. Impacts can be anticipated where correlations between factors are recognized and understood, albeit poorly (or at least described). Until they happen, certain impacts cannot be predicted (UNEP, 2002).

UNEP (2002) has a statement that there are numerous causes for unpredictability in impact forecasting:

- Research based doubt - incomplete comprehension of an environment and the mechanisms influencing transformation.
- Information doubt - limitations brought forth by poor measuring procedures or missing or peerless knowledge.
- Regulatory doubt - refers to ambiguous or contested goals, benchmarks, or regulations for controlling possible risks as well as their consequences.

2.7.3.4 Analysis of Alternatives

It has been stated in UNEP (2002) that, while the EIA is conducted at the beginning of the project progress, it tends that it will be furthest beneficial to take alternatives into account. The kind and scope of options that could be taken into account based on timeframe contain:

- Encourage different options.
- Provide or input different options.
- Different options for the imposed actions.
- Different options for the positioning of the full plan or for its parts.
- Different options for the procedures.
- Having a timetable for the different options.

2.7.4 Mitigation and Impact Management

Identification of safeguards for the environment and the communities at risk from the plan is the purpose of mitigation. Mitigation is an innovative and practical aspect of the EIA procedure that searches out the best protective, minimizing, and corrective methods. If mitigation measures are to be effective, they must be put into practice correctly and at the appropriate time. Impact management is the procedure, and it

happens as a project is being implemented. For this reason, a documented plan that contains a timeline for the agreed-upon steps should be created (UNEP, 2002).

According to the UNEP (2002) statement, the goals of mitigation involve:

- looking for more suitable options and methods of carrying them out;
- amplifying a proposal's positive effects on the environment and society;
- preventing, lessening, or addressing negative effects; and
- being certain that any remaining negative effects are maintained to a minimum.

Additionally, the following are the goals of handling impacts:

- being certain that mitigating strategies are put into action;
- creating frameworks and practices that serve this objective;
- keeping track of the impact reduction strategies; and
- acting upon any required step if unanticipated negative effects happen.

The phases and elemental hierarchy within the EIA process can be related using the three-step mitigation method that is shown in Figure 5:

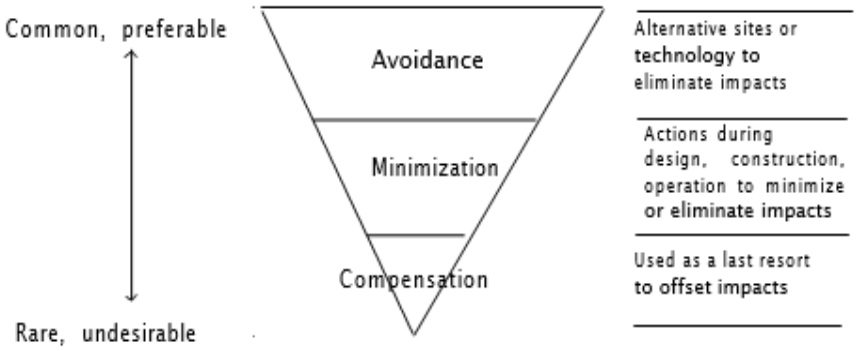


Figure 5: The elements of mitigation (UNEP, 2002)

2.7.4.1 Environmental Management Plan

EIA reporting frequently includes the creation of an EMP which opens as environmental management plan. It converts suggested monitoring and effect-reduction tactics towards particular steps that the proponent will take. The plan may be a distinct document or an appendix to the EIA report, depending on the specific requirements. The EMP must be modified to comply with the conditions outlined upon approving each project. Afterwards will behave like the cornerstone to control negative effects throughout the project development as well as execution (UNEP, 2002).

According to World bank (1999), several elements need to be included among features that make up an EMP:

- Impacts overview
- An explanation of the mitigation strategies
- Monitoring program explanation
- Institutional settings
- Reporting processes and the implementation timetable
- Funding sources and cost projections

2.7.5 EIA Report/Environmental Impact Statement (EIS)

The contractor is required to formulate and deliver an EIA report as a component of the EIA. It is an initial step that establishes the entire EIA phase (Guidance on the preparation of the Environmental Impact Assessment Report, 2017). The report phase of EIA, which can also be defined as Environmental Impact Statement (EIS) is an important tool to assist with choices. All the data is organized, and a summary of the outcomes of the investigations and discussions conducted are synthesized. The

potential environmental effects of an asserted suggestion, the recommended solutions for minimizing and controlling them as well as the importance for every lasting effect should all be described in detail but succinctly. The authorizing and performing departments, as well as those who are intrigued, and the impacted public make up the audience for an EIA report. The EIA document needs to be arranged and written frankly due to its significance as a communication tool. An effective report will be produced to both proper technical standards and in plain language for non-experts (UNEP, 2002).

Developers are obligated to disclose everything that follows in an EIA document (Guidance on the preparation of the Environmental Impact Assessment Report, 2017):

- A brief overview regarding the project: It serves as an opening towards the project and gives information about where it is located, its construction and operation stages, as well as a prediction of the expected leftovers, pollutants, and squander that will be generated during these phases.
- Foundation circumstance: An overview of the present condition of the surroundings and how it is anticipated to change in the absence of the Project's execution. It establishes the framework for the upcoming EIA, and the nations involved have to guarantee that the Contractor has access to any data for the "foundation circumstance" possessed by any agencies.
- Environment-related variables influenced: An explanation of how the Project has influenced the environment, particularly a focus upon changes in the climate, assets from nature, biodiversity as well as incidents and catastrophes.
- Environmental consequences: It discusses the idea of important effects and the role of effects that accumulate.

- Evaluation of different options: Other options associated with the Project have to be defined, assessed, and the primary factors that led to the alternative's approval must be stated.
- Reduction or Atonement: It is also important to take into account interventions, such as characteristics or actions that avoid, lessen, or negate negative impacts.
- Controlling or Observing: If major negative consequences have been discovered, the report of the EIA shall include the planned monitoring strategies. The monitoring should be done both throughout a project's construction phase and operations.
- Unspecialized Recap: It is a concise overview of the EIA report's material that is given without technical terms and is therefore clear to anybody without prior knowledge of the surroundings or the proposed project.
- Integrity regarding the report of the EIA: The report of the EIA ought to be prepared by appropriate specialists, and the authority capable of studying it ought to have availability to the necessary skills to review it. It ought to be displayed well, along with the unspecialized recap. The authority in charge could ask for additional details if all the relevant information are not included.

2.7.6 Review of EIA Quality

Checking the integrity of an EIA report is a legal step in the entire procedure. The data contained in the document is examined to figure out whether it adheres to the conditions of purpose and meets the criteria for usage when generating selections. The major chance for the public feedback regarding the important consequences and their reduction normally occurs during the review stage. A methodical, clear observing phase supports the public and those in charge trust in the entire EIA progress more and assures those in charge that the statement of negative effects is trustworthy. The whole

goal of the review is to make sure the data acquired for an EIA is accurate and of high quality. It has the importance as a formal stage being the last control for the integrity of an EIA report document in order to get the approval for a project. This procedure frequently necessitates further information on possible consequences, minimizing tactics, as well as additional concerns (UNEP, 2002).

Due to UNEP's (2002) explanation, crucial points of EIA review phase include:

- Evaluating the sufficiency and integrity regarding a report of EIA.
- Considering the public opinion.
- Understanding whether there is enough knowledge available to make a final choice.
- When required, defining the flaws that must be corrected prior to the report is permitted to be filed.

2.7.7 Public Involvement/Participation

A key aspect of the EIA procedure is the participation of the public. Public participation programs that are timely, thoughtfully planned, and effectively carried out will support EIA investigations as well as the effective proposals' administration, execution, planning, and maintenance. Particularly, the involvement of the public is a useful phase of knowledge regarding the main effects, possible minimizing methods, and defining as well as selecting different options. Additionally, it makes the EIA process robust, inclusive, and clear with justifiable analysis. People who will be directly influenced by a plan ought to, at the absolute least, have the opportunity to voice their opinions about it and its possible implications on the natural surroundings and community (UNEP, 2002).

UNEP (2002) stated that participation of the people is meant to:

- educate the parties involved about the proposal's potential impacts;
- collect their suggestions, opinions, and issues;
- consider the people's knowledge and opinions while conducting an EIA and concluding choices.

2.7.8 Decision Making

Concluding choices involves choosing a particular option instead of other options. Political by default primarily, this procedure entails balancing the pros and drawbacks and concluding a choice based on a variety of factors. Frequently, the interests of all parties are explicitly represented, and decisions are reached incrementally through negotiation, bargaining, and compromise. EIA is a procedure for obtaining data in this context with the goal of promoting ecologically sound decision-making. The outcome of this process is a final judgement on whether or not and under what conditions a proposal is acceptable (UNEP, 2002).

UNEP (2002) has explained that it is critical that those in charge are conscious of their obligation to carry out the EIA procedure and to utilize its findings to handle a proposal’s potential hazards and implications more efficiently. Those in charge should at least be aware of:

- the fundamental idea of EIA as well as SEA and its goal;
- practicable EIA regulations, concepts, and recommendations;
- the success of their application and its effects on making choices;
- any restrictions that might require to be put on the instructions and data provided within the report of an EIA;
- the way the EIA procedure along with operation compared to those used in comparable nations and to criteria that are generally acknowledged globally;

- the problems with people's input into making choices, such as external and constitutional obstacles to the approval of initiatives requiring EIA.

2.7.9 Implementation and Follow-up

The EIA process' execution and further investigation phases are crucial yet sometimes overlooked. Following final approval, mechanisms for surveillance, monitoring, auditing, and evaluation enable continuing study and review of the effects of the plan. These come forward in order to determine the negative effects that take place, verify that they fall through the ranges anticipated and mandated by law, check that reducing strategies are correctly put into action and effective, confirm that the anticipated ecological advantages are in the conversation, and offer comments to enhance potential uses of the EIA progress hereafter. The goal of applying the EIA and its further investigation is to guarantee that the requirements imposed on acceptance of the project are upheld and work as intended as well as to collect data that will help EIA progress thereafter (UNEP, 2002).

The mentioned procedure is unable to fix a harmful project to its surroundings on its own. Maximizing the benefits within a report of an EIA's development and taking them into account for making a choice is crucial. Implementing and monitoring EIAs enables the strategies and requirements affixed to acceptance of a project to then be adjusted in the presence of fresh facts. They enable controlling the unwanted effects, add permanency to the entirety of an EIA procedure, and aid in maximizing advantages of surroundings for each project's advancement step when employed methodically (UNEP, 2002).

According to the UNEP (2002) "Tracking the consequences or negative effects, tracking observance, inspection of the surroundings, older following of examination,

and following of project study are some of the primary elements and techniques used in the execution and further investigation of an EIA."

UNEP (2002) states that "The methodical gathering of information about the environment via a number of continuous tests is referred to as monitoring the environment. Initial tracking, affect tracking, and accountability tracking are just a few examples of tracking operations."

Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

The methods utilized in this research for gathering and analyzing data are discussed and explained under research methodology. According to McCombes & George (2022) “Research methodology chapter consist of:

- The nature of the research.
- The methods used to gather and examine the data.
- Whatever equipment or supplies utilized during the research.
- The reason certain techniques were selected.”

This study aimed the quality evaluation of the selected EIA reports from projects in İskele/TRNC and their overall and section quality compliance with EU EIA Report Standards. In this methodology chapter, the research approach and methods towards evaluation and compliance processes, the selected project samples, the EU EIA Report Review Checklist questions, Quality Index formula, data collection tools that have been used and data analysis procedures are explained.

3.2 Research Approaches

Study approaches, which span everything from study subjects to particular methods for acquiring, evaluating, and comprehending data, are strategies and processes for carrying out the study. A method of study is determined after taking into account the type of study topic or problem to be investigated, the investigator's distinctive

knowledge, and the subject matter's intended recipients. The important revolutionary study methods consist of Quantitative, Qualitative, and Mixed methods. These methodological approaches are clearly not as dissimilar as they appear right away. Therefore, it is fundamental to keep in mind that qualitative and quantitative methods shouldn't be diametrically opposed, rigidly divided, or dichotomized (Creswell, 2014).

Within this thesis, the best way of research approach was mixed method as there were secondary qualitative and qualitative data included within the selected İskele/TRNC EIA reports and qualitative research data for literature review. Furthermore, qualitative set of review checklist questions from EU EIA Report Guidance document (Guidance on the preparation of the Environmental Impact Assessment Report, 2017) were used for the overall and section quality evaluation of the selected EIA reports and their compliance check with EU EIA Report Standards. Additionally, Quality Index formula (Naser, 2015; Soderman, 2005; Khera and Kumar, 2010) was used for these processes to obtain quantitative results, hence the mixed method approach is chosen.

3.2.1 Qualitative Research

Qualitative research entails collecting and examining data that is not numerical in order to gain insight into concepts, views, and firsthand knowledge. This way of research has the potential to be applied to unearth sophisticated knowledge regarding an instance or to generate distinctive study ideas. To gain a greater awareness of the way people perceive what is around them, qualitative research is carried out. Whilst several strategies exist for the mentioned research type, nearly all of them are versatile and place a priority on conserving the data's fully detailed content during examination (Bhandari, 2020). According to Bhandari (2020) “Every study

strategy calls for the implementation of any number of techniques for gathering information. The best-known qualitative study techniques are findings, conversations with individuals, discussion with related party, polls, and additional investigation."

3.2.2 Quantitative Research

Quantitative studies involve the procedure of collecting and examining statistical information. The mentioned way of approach is capable of being applied to uncover patterns and mean values, create theories or scientific inquiries, investigate causes, and expand outcomes to larger sets of data (Bhandari, 2020). In analytical studies, investigating the correlations amongst parameters is a technique utilized for verifying unbiased concepts. These parameters are able to be quantified, frequently with the aid of tools, in order to examine information that is numerical applying statistical procedures (Creswell, 2014). Bhandari (2020) has stated that "One may conduct informative, related, as well as empirical studies through quantitative study techniques". As an additional information about the collection of quantitative data, according to Bhandari (2020), "One can expect to apply practical descriptions, which convert initial concepts towards tangible and measurable regulations to gather numerical information: Experiment, survey, observation (systematic), and subsequent investigation."

3.2.3 Mixed Methods Research

According to Creswell (2014) "A strategy to study known as mixed methods research entails gathering qualitative as well as quantitative information, merging both types of information, and employing unique methods offering underlying hypothesis and conceptual structures. This type of study is predicated on the fundamental premise that integrating the two types of methods yields a better knowledge of the study's issue than each method by itself". Mixed methods approach blends elements of both quantitative

and qualitative methods to answer an academic question. Mixed techniques, which combine the benefits of both approaches, can help generate a more complete picture than a single way of approach. The universality, the use of context, and legitimacy of the combined techniques approach are all prominent justifications (George, 2021).

3.3 EIA Report Samples, EU EIA Report Review Checklist, and Sample Sizes

3.3.1 Project A

The project A is located approximately 4 km South of İskele City Centre and is approximately 600 m from the sea. The total project area is 15,258 m2. The facility is designed as an A and B Block. Block A is designed as a basement, ground floor, and 22 floors. Block B is designed as a 1 storey building. The EIA report for this project was published in March 2019.

3.3.2 Project B

The project B is located in İskele and it is 460 m away from the sea. The total project area covers 34,853 m2. The project of Block A designed as basement, ground + 14 floors; Block B, ground + 25 floors; Block C, ground + 27 floors, Block D ground floor + 19 floors. The EIA report for this project was published in September 2019.

3.3.3 Project C

The project C is located approximately 2 km south of İskele City Centre, and 500 m from the nearest coastline. A total of 14,721 m2 covers the area. In the project 3 blocks were offered, Block A (9 floors) 2 units, Block B (10 floors) 1 unit and Block C (9 floors) 4 units. The EIA report for this project was published in May 2019.

3.3.4 Project D

The project D is in İskele region and within the report it has been stated that it is approximately 700 m away from the nearest coastline. The area covers 85,623.68 m2

in total. The project consists of 18 blocks of one type, ground +10 floors. The EIA report for this project was published in January 2019.

3.3.5 Project E

The project E is in İskele district and is located on the coastline and the sea is positioned towards east side of the project. The total project area covers 102,961 m2. Within the scope of the project, type A to E buildings is to be constructed. Type A consists of 1 floor basement, ground + 4 floors. Type B consists of ground +4 floors. Type C consists of 5 buildings, designed as ground + 1 floor. Type E only consists of ground floor. The EIA report for this project was published in August 2017.

3.3.6 EU EIA Report Review Checklist Questions

Published by European Union (2017), the "Guidance on the preparation of the Environmental Impact Assessment Report" document had 7 sections of review checklist questions. The purpose of these review checklist questions is to check if those qualities were present within an EIA Report. All sections have been used with the chosen number of questions being 50 total for quality evaluation of İskele/TRNC projects' EIA reports and their compliance check with EU EIA Report standards. The questions can be seen in "Appendix A: The Review Checklist Questions" title under "APPENDIX" chapter within this thesis.

3.3.7 Sample Sizes

The EU EIA Report review checklist questions covers 7 sections and the total number of questions that are selected is 50. The number of questions in order are 12 from section 1; 7 from section 2; 12 from section 3; 4 from section 4; 4 from section 5; 4 from section 6 and 7 from section 7.

Project A has 110 pages of detailed information within its EIA report. Project B has 85 pages of detailed content within its EIA report. Project C consists of 158 pages of content. Project D has 106 pages of detailed EIA report. Finally, Project E has 94 pages of comprehensive EIA report.

3.4 Quality Index Formula

"Quality Index" formula has been used within the data analysis chapter with the purpose of integrating the EU EIA Report Review Checklist questions with İskele/TRNC projects' EIA reports. Consequently, applying this formula enabled this study to have numerical quality index for the selected EIA reports and to have compliance check with EU EIA Report Standards by using the review checklist questions within the formula. Finally, the values of quality indexes are then categorized as "Poor", "Borderline", "Satisfactory", and "Good". According to Naser (2015), "The quality index was used to evaluate the reports from the EIA that were under review for quality that was applied by Soderman (2005) and Khera and Kumar (2010)".

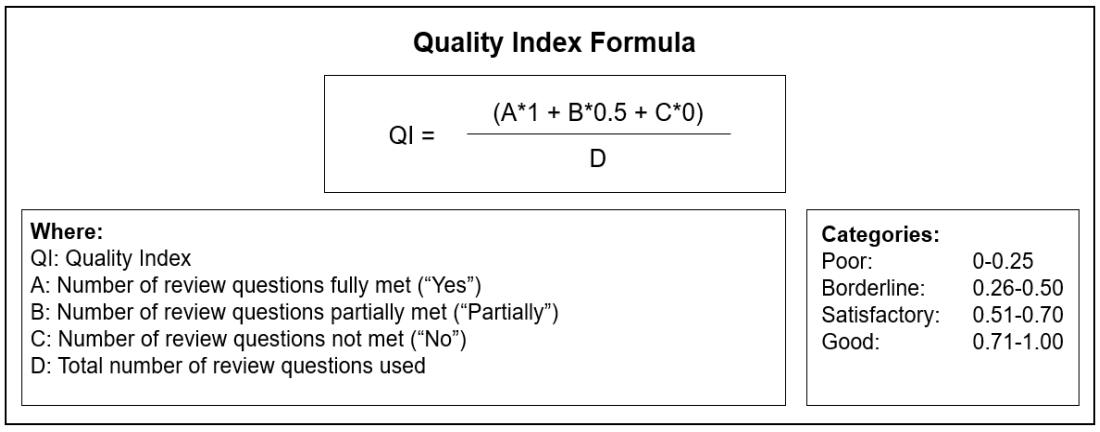


Figure 6: Quality Index Formula (By author of this thesis) influenced by Soderman (2005), Khera and Kumar (2010), and Naser (2015)

3.5 Data Collection Tools

A mixed method consisting of both qualitative and quantitative features has been used within this thesis. The reason for mixed method being used was that it gave an efficient advantage within the evaluation and compliance processes than qualitative or quantitative method separately. Being secondary data, officially published digital documents of İskele/TRNC Projects' EIA reports have been used. Additionally, secondary data of review checklist questions have been acquired from the official document of the EU EIA Report review checklist questions. Finally, as a secondary data as well, "Quality Index Formula" has been used and applied.

According to Parveen, Huma & Showkat, and Nayeem (2017) "Targeted knowledge is gathered during the gathering of data, which is subsequently carefully assessed to provide explanations to study issues and assess the outcomes. It forms the core of every study's layout, regardless of the subject. Each project of study starts with a set of questions that must be addressed."

3.6 Data Analysis Procedure

Analyzing the data is surely fundamental for studies since it greatly explains and improves the exactness of the information that has been gathered. It helps scientists to thoroughly assess the data, guaranteeing that not anything is left out that would hinder them from forming conclusions. Analyzing a set of data in different forms defines the data analysis phase perfectly (Amadebai, 2022).

All the collected data of the selected 5 İskele/TRNC projects' EIA reports and their sections would be analyzed for quality evaluation and compliance check with EU EIA Report Standards. Regarding the data analysis, Quality Index formula would be

applied with the EU EIA Report Review Checklist Questions and selected EIA reports to come up with a result and to respond to the research questions. With the use of qualitative data and acquiring a quantitative result, the importance of mixed method approach would be understood. Additionally, recommendations would take place concerning the thesis topic. Lastly, the programs that are used for the evaluation and compliance check by the formula include Microsoft Excel, Microsoft PowerPoint, and Microsoft Word.

Chapter 4

DATA ANALYSIS

4.1 Introduction

Regarding the chapter on data analysis, 50 review questions have been chosen from EU EIA Report guidance document's checklist. The questions' full detail is present within the "Appendix A: The Review Checklist Questions" title under "APPENDIX" chapter in this thesis. However, the questions within the data analysis tables are not displayed to full extent as they are abbreviated to the main part of a question without examples. These questions were categorized as 7 sections which are "Description of the project", "Description of environmental factors likely to be affected by the project", "Description of the likely significant effects of the project", "Consideration of alternatives", "Description of mitigation", "Description of monitoring measures" and "Quality" sections. The review questions' purpose was to define the section and overall quality of 5 İskele/TRNC EIA reports and check if they comply with the EU EIA Report standards. Each section and overall quality of each EIA report were calculated and defined by answering the review questions as "Yes", "Partially" and "No". Furthermore, an average of each section's quality and overall quality were calculated and defined.

The calculation for section and overall quality of İskele/TRNC EIA reports have been achieved by using the "Quality Index" formula. For sections quality, the total number of questions within the formula were only that used section's total number of questions

and for overall quality the total number of all questions were used within the formula. Within the quality index formula, “Yes” answer had the value of 1 and “Partially” answer had the value of 0.5 in which both values were used inside the formula. The answer choice of “No” did not have any value but supported the whole formula.

Data analysis chapter consists of each section’s quality index explanation for the selected İskele/TRNC EIA reports, followed by overall quality index explanation for these reports and finally, discussion of their results, recommendations and responding to the research questions of this study.

4.2 Overall Quality Index for the Selected EIA Reports

Each overall quality index for the chosen 5 İskele/TRNC projects’ EIA reports have been calculated using the quality index formula in the scope of total 50 review questions. Additionally, the average quality index for these five reports has also been calculated.

List of each quality index result of İskele/TRNC Projects’ EIA reports:

- Project A’s EIA report has the overall quality index of 0.45 which is categorized as “borderline” regarding the used formula.
- Project B’s EIA report has the overall quality index of 0.35 which is categorized as “borderline” regarding the used formula.
- Project C’s EIA report has the overall quality index of 0.40 which is categorized as “borderline” regarding the used formula.
- Project D’s EIA report has the overall quality index of 0.33 which is categorized as “borderline” regarding the used formula.

- Project E's EIA report has the overall quality index of 0.30 which is categorized as "borderline" regarding the used formula.

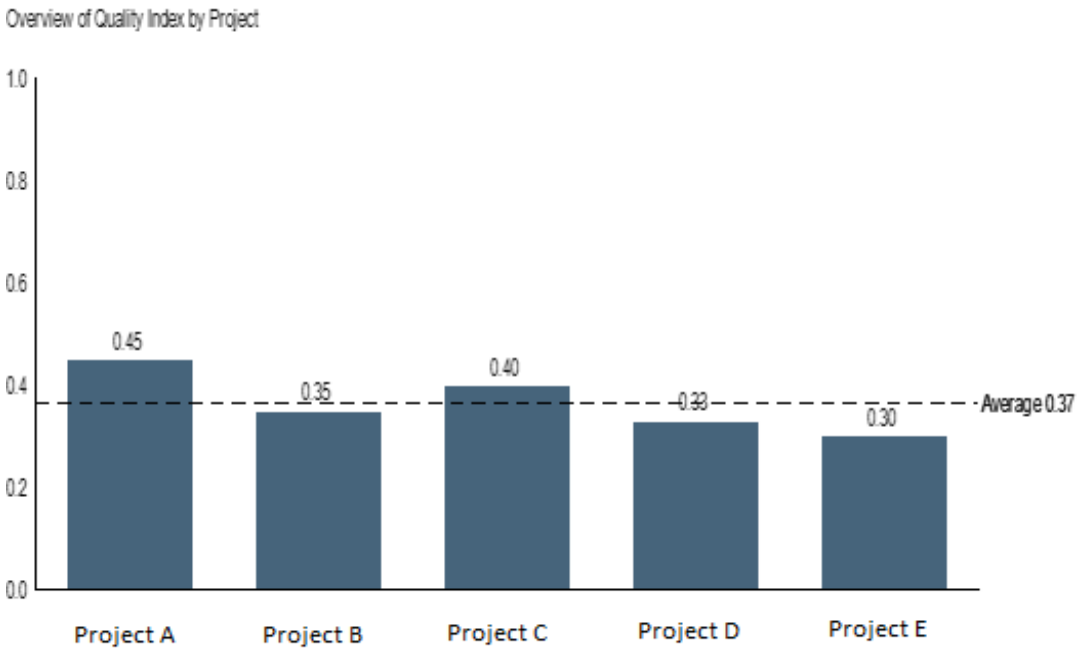


Figure 7: Overall and Average Quality Index of the selected EIA Reports

The average quality index for all five İskele/TRNC projects' EIA reports was calculated as 0.37. This average result of quality index for all reports defined as "borderline" category. As a result, out of all the quality index categories which were poor (0-0.25), borderline (0.26-0.50), satisfactory (0.51-0.70) and good (0.71-1.00), the average quality for all five chosen EIA reports was 0.37 (borderline).

4.3 "Description of the Project" Section Quality Index for the Selected EIA Reports

"Description of the project" section has consisted of 12 questions with the five sub-sections of "the objectives and physical characteristics of the project", "the size of the project", "production processes and resources used", "residues and emissions", and finally "risks of accidents and hazards" (See Table 1).

Project A's EIA report has the quality index of 0.58 (satisfactory) for this section. Followed by quality indexes of 0.54 (satisfactory) for Project B, 0.63 (satisfactory) for Project C, 0.46 (borderline) for Project D, and 0.46 (borderline) for Project E. As an average for all five İskele/TRNC EIA Reports, the quality index is 0.53 which goes into the "satisfactory" category.

Table 1: Section I "Description of the Project" Quality Index for selected EIA Reports and on Average

Section	Sub-sections	Q. No.	Review Questions	Project A		Project B		Project C		Project D		Project E		Avg.
Description of the Project	The Objectives and Physical Characteristics of the Project	1	Are the Project's objectives and the need for the Project explained ?	Yes	1	Partially	0.5	Yes	1	Partially	0.5	Yes	1	
		2	Is the programme for the Project's implementation described, detailing the estimated length of time for construction, operation, and decommissioning?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
		3	Has the location of each Project component been identified, using maps, plans, and diagrams as necessary?	Yes	1	Yes	1	Yes	1	Yes	1	Yes	1	
		4	Is the layout of the site (or sites) occupied by the Project described?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	No	0	
	The Size of the Project	5	Has the area of land required temporarily for construction been quantified and mapped?	No	0	No	0	Partially	0.5	No	0	No	0	
		6	Has the size of any structures or other works developed as part of the Project been identified?	No	0	No	0	Partially	0.5	Partially	0.5	Partially	0.5	
	Production Processes and Resources Used	7	Have all of the processes involved in operating the Project been described?	Yes	1	Yes	1	Yes	1	Yes	1	Yes	1	
		8	Have the types and quantities of resources, raw materials, and energy needed for construction and operation been discussed?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
	Residues and Emissions	9	Have the types and quantities of solid waste generated by the Project been identified?; during construction, during operation and during decommissioning.	Yes	1	Yes	1	Partially	0.5	Partially	0.5	No	0	
		10	Have the methods for collecting, storing, treating, transporting, and finally disposing of these solid wastes been described?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
	Risks of Accidents and Hazards	11	Have any of the risks associated with the Project been discussed?	Partially	0.5	Partially	0.5	Partially	0.5	No	0	Partially	0.5	
		12	Have the measures to prevent and respond to accidents and abnormal events been described?	Partially	0.5	Partially	0.5	Partially	0.5	No	0	No	0	
Section I Quality Index per report & on average					**0.58**		**0.54**		**0.63**		**0.46**		**0.46**	**0.53**

For the first sub-section, the questions mainly have the answer of “Yes” and “Partially” as opposed to a single “No”. Three of the projects’ EIA reports have information of objectives and the need for the project while two of them gave partial information of only objectives of the project but not the need for the project. Utilizing visualizations, schemes, and sketches, the position of each Project aspect has been determined within the attachment of document of situation and site plans. However, within the organization of the project's inhabited territories, it is partially described while missing some processes such as landscaping, entry passageways, places to store things, and subterranean works. Furthermore, for Project E’s report, the lack of information about above criteria was higher than the others hence the answer “No” was the appropriate answer.

The size of the project sub-section’s answers did not fully meet the review questions as Project C’s report was partially descriptive about the amount of the earth needed for building, together with measurements and drawings. Followed by four reports, there was no information on these aspects. The dimensions of all buildings as well as additional infrastructures created during the course of the project were only described partially within three reports as for example, the floor area for the structures planned to be construct has been stated but the height of the buildings is missing as well as other works' size are missing. The other two reports did not give information about these aspects at all within the submitted report.

For the third sub-section, the entirety of reports has efficiently met the requirements of the first review question as the projects' operational procedures were all laid out in detail. However, every single report has only partially described materials' kinds and amount that have been used such as some resourceful materials from earth consisting

of loam, aqua, and terrain but not the power nor unprocessed substance that are necessary for building and work.

The fourth sub-section's first question has the results of two reports having fully "Yes" answer which was about identification of the kinds as well as amounts of garbage released by the projects while two reports partially described identification of garbage that is released by the work but lacks details to it and Project E's report did not explain neither the kinds nor amounts of garbage generated. The second question has only been partially met by all the reports with the reason of some methods for collecting and storing solid wastes have been discussed but not fully in detail. The treatment, transportation and disposing of solid wastes have not been explained.

The final sub-section had two questions. To the first question, four reports had partially answered by only mentioning general risks and accidents briefly but not detailed or associated with this specific project and seems to be not researched deeply into the risks and natural disasters such as earthquake, flood, and landslide. Project D's report did not describe risks or potential accidents at all. For the second question, three of the reports, has only mentioned the emergency plans (without content) and have given general information of reaching out to police department, fire department and district governorate in the cases of risks and accidents or abnormal events. No preventative strategies, instruction, backup procedures, and an early detection method have been described. Two of the reports lack mentioning majority of these information hence the "No" answer should follow.

4.4 "Description of Environmental Factors Likely to be Affected by the Project" Section Quality Index for the Selected EIA Reports

"Description of environmental factors likely to be affected by the project" section consists of 7 questions with the sub-sections of "Baseline: Aspects of the Environment" and "Data Collection and Methods" (See Table 2).

Project A's EIA report has the quality index of 0.64 (satisfactory) for this section. Followed by quality indexes of 0.50 (borderline) for Project B, 0.50 (borderline) for Project C, 0.50 (borderline) for Project D, and 0.57 (satisfactory) for Project E. As an average for all five İskele/TRNC EIA Reports, the quality index is 0.54 which goes into the "satisfactory" category.

Table 2: Section II "Description of Environmental Factors Likely to be Affected by the Project" Quality Index for selected EIA Reports and on Average

Section	Sub-Section	Q. No.	Review Questions	Project A		Project B		Project C		Project D		Project E		Avg.
Description of Environmental Factors Likely to be Affected by the Project	Baseline: Aspects of the Environment	13	Have the topography, geology and soils of the land to be occupied by the Project and the surrounding area been described?	Yes	1	Yes	1	Yes	1	Yes	1	Yes	1	
		14	Have any significant features of the topography or geology of the area described and are the conditions and use of soils been described?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
		15	Has the biodiversity of the land/sea to be affected by the Project and the surrounding area been described and illustrated on appropriate maps?	Yes	1	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
		16	Have the species, and the habitat types that may be affected by the Project been described?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
	Data Collection and Methods	17	Has the study area been defined widely enough to include all of the areas likely to be significantly affected by the Project?	Yes	1	Yes	1	Yes	1	Yes	1	Yes	1	
		18	Have all the sources of data and information from existing databases, free services, and other relevant environmental assessments been investigated?	No	0	No	0	No	0	No	0	No	0	
		19	Have sources of data and information on the existing environment been adequately referenced?	Partially	0.5	No	0	No	0	No	0	Partially	0.5	
Section II Quality Index per report & on average					**0.64**		**0.50**		**0.50**		**0.50**		**0.57**	**0.54**

For the first question out of four total questions of the first sub-section which can be seen at Table 2, all the EIA reports have fully met the review question by describing the site that will be used for the project's operations as well as the surrounding area's geography, earth sciences, and loams. However, for the second question, all the reports have only briefly and insufficiently explained with specifics, geoponic usage, geoponic surface excellence, and the resilience of loam and transportation of weathering have all been covered which qualified as “partial” answer. Within the second question, as for describing the site that will be used for the project's operations as well as the surrounding area's geography, earth sciences, and loams, none of the reports have explained any significant features. Regarding the third question, four reports had “partially” described general information about the biodiversity of the land and the surrounding area but there was lack of information about the biodiversity of the sea. The surrounding area is partially illustrated on maps but with the absence of biodiversity. Project A’s report has described all these aspects fully and illustrated on appropriate maps. For the fourth question of the first sub-section, all the projects’ reports gave brief information of the habitats of the species and species themselves (flora and fauna) but the population of these has not been stated. Habitat types are also mentioned briefly but not in the way that could be affected by the project area hence for this last question of the sub-section, “partially” was the appropriate answer.

Regarding the second sub-section, there were three questions with the first question being if all the places expected to be severely impacted by the project are included in the field of research that must be specified sufficiently. All the reports have been fully met this review question. As for the second question which required if all the reports searched into all of the available records, gratis assistance, and additional pertinent

ecological evaluations as places to obtain knowledge and details. The answer “No” was suitable for all the reports in this case as the question implied as if all the sources been investigated. Regarding the response to the third question of this sub-section, three of the reports' sources of information and data on the current environment were adequately referenced in some areas, while they were not referenced at all in other areas. Therefore, "partially" was the appropriate response. The other two projects' reports had a lack of reference to these sources totally.

4.5 “Description of the Likely Significant Effects of the Project” Section Quality Index for the Selected EIA Reports

The “Description of the likely significant effects of the project” section has consisted of 12 questions with the sub-sections of “Scoping of Effects”, “Prediction of Direct Effects”, “Prediction of Effects on Human Health and Sustainable Development Issues”, “Evaluation of the Significance of Effects” and “Impact Assessment Methods” (See Table 3).

Project A’s EIA report has the quality index of 0.29 (borderline) for this section. Followed by quality indexes of 0.13 (poor) for Project B, 0.21 (poor) for Project C, 0.13 (poor) for Project D, and 0.13 (poor) for Project E. As an average for all five İskele/TRNC EIA Reports, the quality index for this section is 0.18 which goes into the “poor” category.

Table 3: Section III "Description of the likely Significant Effects of the Project" Quality Index for selected EIA Reports and on Average

Section	Sub-Section	Q. No.	Review Questions	Project A		Project B		Project C		Project D		Project E		Avg.
Description of the Likely Significant Effects of the Project	Scoping of Effects	20	Has the process by which the scope of the information for the EIA Report defined been described?	No	0	No	0	No	0	No	0	No	0	
		21	Is it evident that a systematic approach to Scoping has been adopted?	No	0	No	0	No	0	No	0	No	0	
		22	Was consultation carried out during Scoping?	Partially	0.5	Partially	0.5	Partially	0.5	No	0	Partially	0.5	
	Prediction of Direct Effects	23	Have the direct, primary effects on land uses, people, and property been described and, where appropriate, quantified?	Partially	0.5	No	0	Partially	0.5	Partially	0.5	No	0	
		24	Have the direct, primary effects on geological features and characteristics of soils been described and, where appropriate, quantified?	Partially	0.5	No	0	No	0	No	0	No	0	
		25	Have the secondary effects on any of the environment's aspects, above, caused by primary effects on other aspects been described and, where appropriate, quantified?	No	0	No	0	No	0	No	0	No	0	
	Prediction of Effects on Human Health and Sustainable Development Issues	26	Have the primary and secondary effects on human health and welfare described and, where appropriate, been quantified?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	No	0	
		27	Have the impacts on issues such as biodiversity, marine environment, global climate change, use of natural resources and disaster risk been discussed, where appropriate?	Partially	0.5	No	0	No	0	No	0	No	0	
	Evaluation of the Significance of Effects	28	Is the significance or importance of each predicted effect clearly explained with reference to legal or policy requirements, other standards, and the number, importance, and sensitivity of people, resources or other receptors affected?	Partially	0.5	Partially	0.5	Partially	0.5	No	0	Partially	0.5	
		29	Where effects are evaluated against legal standards or requirements, have the appropriate local, national or international standards been used and has relevant guidance followed?	No	0	No	0	No	0	No	0	No	0	
	Impact Assessment Methods	30	Have the methods used to predict the effects described, and the reasons for their choice, any difficulties encountered, and uncertainties in the results been discussed?	No	0	No	0	No	0	No	0	No	0	
		31	Have the impacts been described on the basis that all Mitigation Measures proposed have been implemented?	Partially	0.5	No	0	Partially	0.5	Partially	0.5	Partially	0.5	
Section III Quality Index per report & on average					**0.29**		**0.13**		**0.21**		**0.13**		**0.13**	**0.18**

The first sub-section consisted of three questions. All five EIA reports did not describe the method used for determining the knowledge's range within the EIA report for the first question. Furthermore, it is not immediately apparent that a methodical strategy to scoping was utilized by all the reports for the second question. Furthermore, for the third question of this sub-section, four reports had some documents that are gathered from various Departments regarding the subject of the case, as a permit mostly. The information that has been gathered from these Departments and their opinions can be counted as consultation, but there are not enough aspects in consulting professionals about specific subjects. Scoping consultations has its own requirements to complete so, “partially” was the right answer for four of the reports, but Project D’s report had no sign of any consultation at all.

The second sub-section had three questions as well. For the first question, three reports have partially described the consequences upon public, assets, and utilization of land that are immediate and main briefly, but without any further detail even though some quantification included. Two reports lacked any information about these aspects hence had “No” as an answer. For the second question, four reports did not have description or quantification for the immediate, main impacts on loam properties and terrain attributes while Project A’s report had partially described the immediate, main impacts on terrain attributes but not on loam properties. For the third question of this sub-section, none of the reports described or quantified the additional impacts that main impacts or additional variables have on any element of the surroundings.

The third sub-section had two questions in total. In response to the first review question, four reports partially addressed the main impacts on people’s well-being and prosperity by providing only briefly without going into more detail and giving

quantification to some degree. However, Project E's report made no mention of these elements. For the second question of this sub-section, four of the reports did not discuss repercussions on topics including ecosystems, the maritime surroundings, change in temperature globally, the utilization of assets from earth, and likelihood of catastrophe at all but Project A's report discusses only biodiversity and disaster risk which qualifies as partial description.

To the first question of the fourth sub-section, four reports had "partially" as an answer because they only explained magnitude of some anticipated repercussions in relation to statutory or regulatory constraints, but some are just plainly written without reference. Project D's report had no reference to statutory or regulatory constraints. All the reports had "No" as an answer to the second question as for assessing impacts versus constitutional principles or specifications, neither applicable instructions nor international/national/local norms were applied.

For the last and fifth sub-section, in response to the first question, none of the reports describe the techniques utilized to forecast the impacts, the justifications for the decision they made, any challenges they ran across, and any ambiguity in the findings. For the second question, four reports have partially described the minimizing strategies of the effects suggested to be applied while describing the impacts on some parts. Project B's report did not describe these aspects at all.

4.6 "Consideration of Alternatives" Section Quality Index for the Selected EIA Reports

"Consideration of alternatives" section consists of 4 questions without any sub-sections. Project A's EIA report has the quality index of 0 (poor) for "Consideration of Alternatives" section. Followed by quality indexes of 0 (poor) for Project B, 0 (poor) for Project C, 0 (poor) for Project D, and 0 (poor) for Project E. As an average for all five İskele/TRNC EIA Reports, the quality index for "Consideration of alternatives" section is also 0 which goes into the "poor" category (See Table 4).

Table 4: Section IV "Consideration of Alternatives" Quality Index for selected EIA Reports and on Average

Section	Sub-Section	Q. No.	Review Questions	Project A		Project B		Project C		Project D		Project E		Avg
Consideration of Alternatives	*n.a.*	32	Have the process by which the Project was developed been described and are the Alternatives to the design of the Project considered during this process been described?	No	0	No	0	No	0	No	0	No	0	
		33	Have the Alternatives to the location considered during this process been described?	No	0	No	0	No	0	No	0	No	0	
		34	Are the Alternatives realistic and genuine Alternatives to the Project?	No	0	No	0	No	0	No	0	No	0	
		35	Are the main environmental effects of the Alternatives compared to those of the proposed Project?	No	0	No	0	No	0	No	0	No	0	
Section IV Quality Index per report & on average					**0**		**0**		**0**		**0**		**0**	**0**

The first question was about if the method of how the project originated was stated as well as its design options that were taken into account throughout the creation phase were explained. All five reports had the title of “Project’s Alternatives” within the reports, but they did not have any details about the method of how the project originated was stated as well as its design options that were taken into account throughout the creation phase. For the second question, none of the reports have explained the different options for the position taken into account throughout this phase as well. As the third question was about if different options were legitimate and attainable options to the proposal, all five reports had the response of “No” because there is lack of information about alternatives in the first place.

The fourth question for this section required explanation and a contrast between the planned project's impacts on the surroundings with the impacts of different options for the project. All the reports could not respond to the last question also. Within each report, none of them mentioned alternative designs or locations. Reports didn’t mention anything about the contrast between the planned project’s impacts on the surroundings with the impacts of different options for the project and as a result the alternatives were not realistic and genuine. All the reports only mentioned that their proposed projects were the best option of alternatives without any further detail hence quality index of “0” was the most suitable result for this section.

4.7 "Description of Mitigation" Section Quality Index for the Selected EIA Reports

"Description of mitigation" section consists of 4 questions with no sub-sections. Project A's EIA report has the quality index of 0.63 (satisfactory) for "Description of mitigation" section. Followed by quality indexes of 0.25 (poor) for Project B, 0.50 (borderline) for Project C, 0.38 (borderline) for Project D, and 0 (poor) for Project E. As an average for all five İskele/TRNC EIA Reports, the quality index is 0.35 which goes into the "borderline" category for this section (See Table 5).

Table 5: Section V "Description of Mitigation" Quality Index for selected EIA Reports and on Average

Section	Sub-Section	Q.No.	Review Questions	Project A		Project B		Project C		Project D		Project E		Avg
Description of Migitation	n.a	36	Where there are significant adverse effects on any aspect of the environment, has the potential for the mitigation of these effects been discussed?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	No	0	
		37	Have the measures that the Developer has proposed to implement, in order to mitigate effects, been clearly described and is their effect on the magnitude and significance of impacts clearly explained?	Partially	0.5	No	0	Partially	0.5	Partially	0.5	No	0	
		38	Do the Mitigation Measures cover both the construction and operational phases of the Project?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	No	0	
		39	Have the responsibilities for the implementation of mitigation including roles, responsibilities, and resources been clearly defined?	Yes	1	No	0	Partially	0.5	No	0	No	0	
Section V Quality Index per report & on average					**0.63**		**0.25**		**0.50**		**0.38**		**0**	**0.35**

As a response to the first question, four reports have partially examined the prospect of minimizing certain important negative effects on any feature within the surroundings. The reports discussed these elements in some parts but not on all parts as there was no potential mitigation or acknowledgement of some of the effects hence "partially" was the suitable answer. The remaining one report had a lack of discussion for these elements. Based on the mitigations for significant adverse effects of each project, two main effective measures, fire, and earthquake, were not discussed in any of the projects in a realistic manner. The region is covered with alluvial soil with shallow groundwater levels which increases the vulnerability of the buildings to resist earthquake loads. This should be elaborated within the reports. On the other hand, the region lacks the presence of fire stations and/or fire mitigation equipment specially for tall buildings. These two facts can increase the risk of life safety of residences of the projects and the surrounding people and environment.

As a response to the second question, three reports described the mitigation measures that developers have proposed to implement but did not explain their influence on the size and importance of the negative effects. The other two reports had a lack of descriptions of these aspects totally. Four reports, in some parts, covered the mitigation measures related only with construction or only with operational phases, as well as in some parts it does cover both phases hence, they had partially responded to the third question. The remaining one report did not cover the mitigation measures with both phases.

For the fourth question, Project C had partially defined roles, responsibilities, and resources for the implementation of mitigation to some degree but there is also lack of fully detailed information for these aspects. For Project A, the review question has

been fully met positively. The remaining three reports have not defined these aspects at all.

4.8 "Description of Monitoring Measures" Section Quality Index for the Selected EIA Reports

"Description of monitoring measures" section consists of 4 questions without any sub-sections. Project A's EIA report has the quality index of 0.38 (borderline) for "Description of Monitoring Measures" section. Followed by quality indexes of 0.38 (borderline) for Project B, 0.25 (poor) for Project C, 0.25 (poor) for Project D, and 0.25 (poor) for Project E. As an average for all five İskele/TRNC EIA Reports, the quality index is 0.30 which goes into the "borderline" category for this section (See Table 6).

Table 6: Section VI "Description of Monitoring Measures" Quality Index for selected EIA Reports and on Average

Section	Sub-Section	Q. No.	Review Questions	Project A		Project B		Project C		Project D		Project E		Avg
Description of Monitoring Measures	*n.a.*	40	Where adverse effects on any aspect of the environment are expected, has the potential for the monitoring of these effects been discussed?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	No	0	
		41	Are the measures, which the Developer proposes implementing to monitor effects, clearly described and has their objective been clearly explained?	Partially	0.5	Partially	0.5	No	0	No	0	Partially	0.5	
		42	Have the responsibilities for the implementation of monitoring, including roles, responsibilities, and resources been clearly defined?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
		43	Have arrangements been proposed to monitor and manage residual impacts?	No	0	No	0	No	0	No	0	No	0	
Section VI Quality Index per report & on average					**0.38**		**0.38**		**0.25**		**0.25**		**0.25**	**0.30**

As a response to the first question which was about harmful consequences upon any component of the surroundings that are anticipated, especially if the prospect for tracking these effects has been raised, four reports partially have discussed these elements but not completely for all effects. The remaining report did not discuss these matters at all. Three reports as an answer to the second question, have partially described the steps that the developer wants to take to quickly track the effects but not with the required detail that clearly explains their objective. These aspects have neither been described nor explained within the other two reports as the information for these elements was absent. For the third question, all the reports have partially discussed and defined some responsibilities of implementation of monitoring but with lack of information about resources and roles for the implementation of monitoring hence "partially" was the appropriate answer.

Additionally, all five reports had the response of "No" to the fourth question because there was no proposition of any arrangements to monitor and manage residual impacts and lack of information about these matters within the documents.

4.9 “Quality” Section Quality Index for the Selected EIA Reports

“Quality” section has consisted of 7 questions with the sub-sections of “Quality of presentation”, “Non-Technical Summary” and “Expertise”. Project A’s EIA report has the quality index of 0.50 (borderline) for “Quality” section. Followed by quality indexes of 0.50 (borderline) for Project B, 0.50 (borderline) for Project C, 0.50 (borderline) for Project D, and 0.43 (borderline) for Project E. As an average for all five İskele/TRNC EIA Reports, the quality index is 0.49 which goes into the “borderline” category for this section (See Table 7).

Table 7: Section VII "Quality" Quality Index for selected EIA Reports and on Average

Section	Sub-Section	Q. No.	Review Questions	Project A		Project B		Project C		Project D		Project E		Avg.
Quality	Quality of presentation	44	Is the document(s) logically organised and clearly structured, so that the reader can locate information easily?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
		45	Does the presentation make effective use of tables, figures, maps, photographs, and other graphics?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	
		46	Does the presentation make effective use of annexes or appendices to present detailed data that is not essential to understanding the main text?	No	0	No	0	No	0	No	0	No	0	
		47	Are all analyses and conclusions adequately supported with data and evidence?	No	0	No	0	No	0	No	0	No	0	
	Non-Technical Summary	48	Does the EIA Report include a Non-Technical Summary?	Yes	1	Yes	1	Yes	1	Yes	1	Yes	1	
		49	Does the Summary provide a concise but comprehensive description of the Project, its environment, the effects of the Project on the environment, the proposed Mitigation Measures, and proposed monitoring arrangements?	Partially	0.5	Partially	0.5	Partially	0.5	Partially	0.5	No	0	
	Expertise	50	Is the competency of experts, who are responsible for the preparation of the EIA Report, indicated or otherwise explained in the EIA Report?	Yes	1	Yes	1	Yes	1	Yes	1	Yes	1	
Section VII Quality Index per report & on average					**0.50**		**0.50**		**0.50**		**0.50**		**0.43**	**0.49**

The first sub-section had 4 questions. In response to the first question, all the reports had “partially” as an answer with the reason being documents were mediocre in terms of “rationally arranged, with a clear framework that makes it simple for the reader to find content” requirements. To locate the information could be challenging at times for the reader and the whole reports were organized or structured to some degree but not logically or clearly. For the second question, it was required to find out if the utilization of images, figures, tables, maps, and additional visuals in the way it was presented was effective. All five reports had “partially” as an answer because the mentioned elements were sometimes disorderly and, in some cases, rarely effective. As a response to the third question, all the reports had “No” as an answer because to provide in-depth information that is not necessary for comprehending the primary content, they did not have a way to make appropriate use of annexes as well as appendices. The fourth question for this sub-section was about if all the evaluations and findings have sufficient information and supporting proof and the respond to that by all reports was “No” with the reason being that none of the reports supported these elements.

For the first question of the second sub-section, all the reports responded positively as “Yes” since they all included a brief straightforward synopsis. For the second question of this sub-section, four reports partially had the synopsis give a succinct but thorough explanation of the project, its surroundings, its impacts on the surroundings, the ideas for minimizing these effects, and suggested tracking procedures because there is lack of information about the impacts on the surroundings, the ideas for minimizing these effects, and suggested tracking procedures within the synopsis, but somewhat succinct but thorough explanation of the project and its surroundings. Project E’s report had no

summary section at the beginning of the document apart from having only non-technical summary in another section hence “No” was the appropriate answer for the question was related with “Summary”.

The third sub-section had only one question about the expertise of the specialists who were put in charge of creating the EIA report, as well as if this expertise is included or mentioned elsewhere in the report of the EIA. The answer was “Yes” from all the reports as the resumes and competencies of those who prepared the reports were provided.

4.10 Discussion of the Results and Research Questions

Firstly, the results for overall quality of 5 projects’ EIA reports from the coastal region of İskele district in Turkish Republic of Northern Cyprus and their compliance with EU EIA Report standards will be discussed. Therefore, this discussion part would be answering the first research question of this thesis/study:

“*Does the overall quality of the chosen five projects’ EIA Reports from İskele/TRNC comply with European Union EIA Report quality standards*?”

To this study, the 50 qualitative review checklist questions from EU EIA Report guidance document has given the possibility of comparison between the chosen EIA reports and EU EIA Report standards. Followed by using the “Quality index” formula, the qualitative questions gave a quantitative result that can be categorized, and this mixed method enabled this study for evaluation of these reports and their comparison with the EU EIA Report standards. Overall quality for each EIA report and their average was in the category of “borderline” using the quality index formula with the EU EIA Report review checklist questions. The term “borderline” for quality index

shows that overall quality for the chosen EIA reports were on the edge of being acceptable. Having "borderline" quality, two of the reports with the quality indexes of 0.45 and 0.40 were closer to "satisfactory" than "poor" and three of the reports with the quality indexes of 0.35, 0.33 and 0.30 were closer to "poor" than "satisfactory". All the reports were far from having the "good" quality index which was the highest possible quality.

Just as individually, average quality index for all the reports were also "borderline" with the value of 0.37. With the results of each report being close to each other, it is understood that the average quality makes a point about the overall quality. Within literature review research of this study, it is a known fact that "EIA Report" is one of the most important stages of the entire EIA procedure. Regarding the mentioned reason, qualities of the selected EIA reports were also reflecting the quality of EIA process in İskele/TRNC in some measure. The whole process within data analysis followed by the results proves that the answer for the first research question *"Does the overall quality of the chosen five projects' EIA Reports from İskele/TRNC comply with European Union EIA Report quality standards?"* is "No", the quality of Projects' EIA reports from İskele/TRNC does not comply with quality of the EU EIA Report standards.

Since the individual and average quality of these reports were categorized as "borderline", it means that they did not fully meet the expectations of the standards (review questions) from the official EU EIA Report Guidance document's checklist hence that's why they don't comply with these standards. Furthermore, the quality index categories show that "satisfactory" and "good" were more of a positive result but "poor" and in the case of the chosen reports "borderline" were more of a negative

result. Even though these reports were somewhat acceptable by having “borderline” quality, they were far from following the EU EIA Report standards.

Next, the results for each section’s quality of the 5 projects’ EIA reports and their compliance with EU EIA Report section standards’ requirements will be discussed. Consequently, this part of the discussion would be answering the second research question of this thesis/study:

“*Is each section’s quality for the chosen five projects' EIA reports in compliance with EU EIA Report section standards' requirements?*”

To define the quality within each section of the chosen 5 İskele/TRNC Projects’ EIA reports and to find out their compliance with EU EIA Report section standards, the section review questions were chosen out of total review questions accordingly for each of these 7 sections. The amount of review questions that were chosen for each section were 12, 7, 12, 4, 4, 4, and 7 respectively. Using the “Quality Index” formula with the amount of review questions for each section enabled this study to identify the quality for each section within the chosen EIA reports and their compliance with EU EIA report section standards. For better understanding, the average quality of each section for these reports was crucial as well. In the first section called “Description of the project” it can be seen from the results that the quality between each EIA report varies. Three of the reports had quiet the positive results which were categorized as “satisfactory”, meaning that they were pretty descriptive about the project while the other two reports had “borderline” quality which is barely being acceptable by the amount of description they gave about the project. However, these 5 reports’ average quality index value for the first section was 0.53, which is defined as a satisfactory quality level.

For the second section of “Description of the Environmental Factors likely to be affected by the project”, two reports had “satisfactory” quality while the other three reports were stuck at “borderline” quality. As an average “satisfactory” quality have been achieved also for this section with the value of 0.54 and this can be considered as somewhat a positive outcome as they were descriptive of these environmental factors to some degree. The first two sections’ quality for the reports were the most positive out of all the sections but were still far from the “good” category. For the third section of “Description of the likely significant effects of the project”, the reports had “poor” quality category with the value of 0.18 as an average even though one of the reports had “borderline” quality. Overall, there was a poor approach and lack of information about the projects' potential significant effects within the reports. “Consideration of Alternatives”, which is the fourth section, had the lowest quality among all the sections within the selected reports. Both individually and averagely, the quality index was “0” and categorized as “poor” for all the EIA reports. To discuss further, the reason is that there was complete lack of information about considering alternatives and having no answers at all to the four review questions about this section. This section’s quality shows us that these projects do not really have any alternate solutions or plans considered regarding the project.

“Description of Mitigation” section is another important aspect that is compulsory to have within an EIA report. This fifth section had an average quality index of 0.35 (borderline) for the reports, which is hardly acceptable. This section’s individual quality results for each report were very distinct from each other. It can be seen from the results and each report’s answer to the review questions of this section that the quality can vary depending on the construction company or project. One of the reports

having “satisfactory”, two of them having “borderline” and two of them having “poor” quality individually for this section indicates that there is no consistency or the effort to put a consistent importance for description of mitigation. Regarding the sixth section “Description of Monitoring Measures”, two reports had “borderline” quality while three reports had the quality of “poor”. To point out, this shows that monitoring measures and their description can and are being taken lightly for some projects. As an average, “0.30” quality index for this section categorizes as “borderline” which defines that description of monitoring measures are barely acceptable within the standards of EU EIA Report.

The last and seventh section was “Quality” and all the reports had “borderline” quality which also resulted in “borderline” as an average with the quality index value of 0.49. This section’s requirements from the review questions were only partly achieved by all the reports. By the aspects of quality section regarding the review questions, all the documents of these projects had almost the same quality compared to each other. To summarize, the sections of “Description of the Project” and “Description of the Environmental Factors likely to be Affected by the Project” had a satisfactory quality on average. Then, the sections “Description of Mitigation”, “Description of Monitoring Measures”, and “Quality” had a borderline quality followed by “Description of the likely Significant Effects of the Project” and “Consideration of Alternatives” sections of poor quality. This means that the answer for this study’s second research question “*Is each section’s quality for the chosen five projects' EIA reports in compliance with EU EIA Report section standards' requirements?*” is “No” with the reason being that 5 out of 7 sections are far from being in compliance with EU EIA Report section standards. As this research question implies if “each” section’s

quality of the reports does comply with EU EIA Report standards, the answer “No” implies that not “each” section meets the requirements.

Furthermore, it can be concluded that the overall quality of each chosen EIA report compared to EU EIA Report standards, was affected by the quality of each section within them. The analyzed overall quality of 5 İskele/TRNC coastal region Projects’ reports were insufficient. By improving specially, the “Poor” sections of “Description of the likely Significant Effects of the Project” and “Consideration of Alternatives”, and “Borderline” sections of “Description of Mitigation”, “Description of Monitoring Measures”, and “Quality” within the reports, an overall better quality could be achieved. Additionally, by the research within literature review chapter, it can be understood that legislation and application of EIA process have a great importance for having a sufficient EIA report or vice versa.

Additionally, there are other studies that also use the quality index formula and certain review questions regarding their study. As a support to this study’s approach, the example of three articles that have the same approach can be mentioned. The First example of an article has the title of “The role of environmental impact assessment in protecting coastal and marine environments in rapidly developing islands: The case of Bahrain, Arabian Gulf” (Naser, 2015). Regarding this article’s study, Naser (2015) states that “The quality index ratings of the reviewed EIA reports in this study indicated that 35% of the reports were assessed as satisfactory or good quality (0.51-1.0) compared with 65% of unsatisfactory or borderline quality (0.0-0.5). However, there were variations in the extent to which the review areas and their attributes were met between the reviewed EIA reports. Despite this general improvement in the overall quality of the reviewed EIA reports, the main findings of the present study also

identified a number of shortcomings in environmental and ecological assessment practices related to coastal and marine developments in Bahrain".

The second example of an article titled as "Treatment of biodiversity issues in Finnish environmental impact assessment" (Soderman, 2005). In relation with this article, Soderman (2005) has stated that "In summary, the findings of this analysis indicate that most assessment reports did not meet the requirements of the Finnish EIA Act and Decree with respect to biodiversity impact assessment. Some explicit requirements of the Finnish legislation, for instance, for a monitoring scheme, have clearly yielded positive attempts. The Finnish situation is a move towards better practice in monitoring ecological impacts of development projects but there are still many deficits. These detailed guidelines aim to help developers and consultants to consider relevant ecological issues in the assessment process. In addition, they encourage decision makers to demand that these issues are presented understandably in the reports".

The third example of an article has its title as "Inclusion of biodiversity in environmental impact assessments (EIA): a case study of selected EIA reports in India" (Khera and Kumar, 2010). Within this article, Khera and Kumar (2010) explain that "The results indicate a variation in the extent to which criteria were met. Some attributes were fully met in most of the reports (at least 18 of the 22 reports), but other attributes were not fully met in most of the reports. While the attributes that were met fully in most of the reports set an example of a good practice, the attributes not fully met in any of the reports indicate a regular trend of negligence in addressing these attributes. This may need to be considered specifically and in some detail by the regulatory authorities. Inclusion of biodiversity expert(s) is not mandatory in Indian statute. However, considering the complexities associated with biodiversity

assessment and impact prediction, it is very important to involve a biodiversity expert during the impact assessment process. This study revealed that none of the EIAs involved a biodiversity expert".

As a summary of the mentioned three articles that have the same way of approach towards their studies by using a quality index formula with their related review questions as well as local EIA reports, they all have credible results and certain discussions about them. Within this study, it is the case of integrating the quality index formula, İskele/TRNC EIA reports and the EU EIA Report review checklist questions which provided the results and their discussion.

Finally, it can be recommended that the EU EIA Report Guidance document's review checklist could help TRNC EIA reports to be more effective and have a better quality. With this recommendation, the authorities could add relevant review questions to the already existing EU EIA Report checklist concerning special local conditions within TRNC and the coastal region of İskele. This action could highly increase the quality of EIA reports by having a checklist aiming to include every necessary aspect. Such a compulsory process would greatly increase the quality of an EIA report, and this would result in construction companies being more knowledgeable and having more responsibility. At the same time, a checklist like this would be helpful for government authorities to inspect and decide if a project can be started or not. By implementing these measures, the overall and section quality of an EIA report within TRNC could be improved to sustain and protect the environment, nature, wildlife, and people. The reports in TRNC almost regret the requirements of Directive 2014/52/EU. Furthermore, factors such as resources, economy, and development of an area would also be positively influenced by an improved EIA report and process.

Chapter 5

CONCLUSION

To conclude, the aim for this thesis was to evaluate EIA reports of projects from İskele/TRNC and compare their quality with EU EIA report standards. There is a fact that İskele region's constructional growth is happening so rapidly with the high interest by people and construction companies for attractions within the district. Therefore, it is crucial to have a sufficient EIA report as it is one of the most important stages of the whole EIA process and for any project to sustain the environment.

Related to the topic of this study, two research questions have been created to reach in depth evaluation of the chosen five İskele/TRNC Projects' EIA reports and their comparison with EU EIA report standards. Regarding the first research question, by using EU EIA report guidance review checklist questions and quality index formula, it has been concluded that the selected set of EIA reports' quality do not comply with EU EIA Report Standards. Subsequently, concerning the second research question, organizing the review checklist questions by their section categories, and using them with the quality index formula enabled to compare the selected EIA reports' section quality with EU EIA report section standards. Thereby, it was found that most sections within selected EIA reports did not comply with the quality standards of EU EIA Report Standards.

Based on the findings, by having better quality for each section of selected EIA reports, the overall quality for them could be improved. The recommendation of developing and applying an updated review checklist influenced by EU EIA report standards could be useful for İskele/TRNC Projects' EIA reports to have sufficient quality. Consequently, improving these factors would then result in having a sustainable environment within İskele/TRNC district and implementing the right choices of projects for the area.

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APPENDIX

Appendix A: The Review Checklist Questions

No	Section	Sub-Section	Review Questions
1	Description of the Project	The Objectives and Physical Characteristics of the Project	Are the Project's objectives and the need for the Project explained?
2	Description of the Project	The Objectives and Physical Characteristics of the Project	Is the programme for the Project's implementation described, detailing the estimated length of time (e.g., expected start and finish dates) for construction, operation, and decommissioning? (This should include any phases of different activity within the main phases of the Project, extraction phases for mining operations for example)
3	Description of the Project	The Objectives and Physical Characteristics of the Project	Has the location of each Project component been identified, using maps, plans, and diagrams as necessary?
4	Description of the Project	The Objectives and Physical Characteristics of the Project	Is the layout of the site (or sites) occupied by the Project described? (Including ground levels, buildings, other physical structures, underground works, coastal works, storage facilities, water features, planting, access corridors, boundaries)

No	Section	Sub-Section	Review Questions
5	Description of the Project	The Size of the Project	Has the area of land required temporarily for construction been quantified and mapped?
6	Description of the Project	The Size of the Project	Has the size of any structures or other works developed as part of the Project been identified? (e.g., the floor area and height of buildings, the size of excavations, the area or height of planting, the height of structures such as embankments, bridges or chimneys, the flow or depth of water)
7	Description of the Project	Production Processes and Resources Used	Have all of the processes involved in operating the Project been described? (e.g., manufacturing or engineering processes, primary raw material production, agricultural or forestry production methods, extraction processes)

No	Section	Sub-Section	Review Questions
8	Description of the Project	Production Processes and Resources Used	Have the types and quantities of resources, e.g., natural resources (including water, land, soil, and biodiversity), raw materials, and energy needed for construction and operation been discussed?
9	Description of the Project	Residues and Emissions	Have the types and quantities of solid waste generated by the Project been identified? (Including the construction or demolition of wastes, surplus spoil, process wastes, by-products, surplus or reject products, hazardous wastes, household or commercial wastes, agricultural or forestry wastes, site clean-up wastes, mining wastes, decommissioning wastes); during construction, during operation and during decommissioning.
10	Description of the Project	Residues and Emissions	Have the methods for collecting, storing, treating, transporting, and finally disposing of these solid wastes been described?

No	Section	Sub-Section	Review Questions
11	Description of the Project	Risks of Accidents and Hazards	Have any of the risks associated with the Project been discussed? Such as risks from handling of hazardous materials; risks from spills fire, explosion; risks of traffic accidents; risks from breakdown or failure of processes or facilities; risks from exposure of the Project to natural disasters (earthquake, flood, landslide etc.).
12	Description of the Project	Risks of Accidents and Hazards	Have the measures to prevent and respond to accidents and abnormal events been described? (Preventive measures, training, contingency plans, emergency plans, early-warning systems, etc.)
13	Description of Environmental Factors Likely to be Affected by the Project	Baseline: Aspects of the Environment	Have the topography, geology, and soils of the land to be occupied by the Project and the surrounding area been described?

No	Section	Sub-Section	Review Questions
14	Description of Environmental Factors Likely to be Affected by the Project	Baseline: Aspects of the Environment	Have any significant features of the topography or geology of the area described and are the conditions and use of soils been described? (Including soil quality stability and erosion, agricultural use and agricultural land quality)
15	Description of Environmental Factors Likely to be Affected by the Project	Baseline: Aspects of the Environment	Has the biodiversity of the land/sea to be affected by the Project and the surrounding area been described and illustrated on appropriate maps?
16	Description of Environmental Factors Likely to be Affected by the Project	Baseline: Aspects of the Environment	Have the species (including their populations and habitats), and the habitat types that may be affected by the Project been described? (Particular attention should be paid to any species and habitats protected under the Habitats and Birds Directives (Directives 92/43/EEC and 2009/147/EC).
17	Description of Environmental Factors Likely to be Affected by the Project	Data Collection and Methods	Has the study area been defined widely enough to include all of the areas likely to be significantly affected by the Project?

No	Section	Sub-Section	Review Questions
18	Description of Environmental Factors Likely to be Affected by the Project	Data Collection and Methods	Have all the sources of data and information from existing databases, free services, and other relevant environmental assessments been investigated?
19	Description of Environmental Factors Likely to be Affected by the Project	Data Collection and Methods	Have sources of data and information on the existing environment been adequately referenced?
20	Description of the Likely Significant Effects of the Project	Scoping of Effects	Has the process by which the scope of the information for the EIA Report defined been described? (For assistance, see the Scoping Guidance Document in this series)
21	Description of the Likely Significant Effects of the Project	Scoping of Effects	Is it evident that a systematic approach to Scoping has been adopted?

No	Section	Sub-Section	Review Questions
22	Description of the Likely Significant Effects of the Project	Scoping of Effects	Was consultation carried out during Scoping?
23	Description of the Likely Significant Effects of the Project	Prediction of Direct Effects	Have the direct, primary effects on land uses, people, and property been described and, where appropriate, quantified?
24	Description of the Likely Significant Effects of the Project	Prediction of Direct Effects	Have the direct, primary effects on geological features and characteristics of soils been described and, where appropriate, quantified?

No	Section	Sub-Section	Review Questions
25	Description of the Likely Significant Effects of the Project	Prediction of Direct Effects	Have the secondary effects on any of the environment's aspects, above, caused by primary effects on other aspects been described and, where appropriate, quantified? (e.g., effects on biodiversity, including species and habitats protected under Directives 92/43/EEC and 2009/147/EC caused by soil, air or water pollution or noise; effects on uses of water caused by changes in hydrology or water quality; effects on archaeological remains caused by desiccation of soils)
26	Description of the Likely Significant Effects of the Project	Prediction of Effects on Human Health and Sustainable Development Issues	Have the primary and secondary effects on human health and welfare described and, where appropriate, been quantified? (e.g., health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups).

No	Section	Sub-Section	Review Questions
27	Description of the Likely Significant Effects of the Project	Prediction of Effects on Human Health and Sustainable Development Issues	Have the impacts on issues such as biodiversity, marine environment, global climate change, use of natural resources and disaster risk been discussed, where appropriate?
28	Description of the Likely Significant Effects of the Project	Evaluation of the Significance of Effects	Is the significance or importance of each predicted effect clearly explained with reference to legal or policy requirements, other standards, and the number, importance, and sensitivity of people, resources or other receptors affected?
29	Description of the Likely Significant Effects of the Project	Evaluation of the Significance of Effects	Where effects are evaluated against legal standards or requirements, have the appropriate local, national or international standards been used and has relevant guidance followed?
30	Description of the Likely Significant Effects of the Project	Impact Assessment Methods	Have the methods used to predict the effects described, and the reasons for their choice, any difficulties encountered, and uncertainties in the results been discussed?

No	Section	Sub-Section	Review Questions
31	Description of the Likely Significant Effects of the Project	Impact Assessment Methods	Have the impacts been described on the basis that all Mitigation Measures proposed have been implemented i.e. have the residual impacts been described?
32	Consideration of Alternatives		Has the process by which the Project was developed been described and are the Alternatives to the design of the Project considered during this process been described? (For assistance, see also the guidance on types of Alternatives which may be relevant in the Scoping Guidance Document in this series)
33	Consideration of Alternatives		Have the Alternatives to the location considered during this process been described? (For assistance, see also the guidance on types of alternatives which may be relevant in the Scoping Guidance Document in this series)
34	Consideration of Alternatives		Are the Alternatives realistic and genuine Alternatives to the Project? (i.e., feasible Project options that meet the objectives)

No	Section	Sub-Section	Review Questions
35	Consideration of Alternatives		Are the main environmental effects of the Alternatives compared to those of the proposed Project?
36	Description of Mitigation		Where there are significant adverse effects on any aspect of the environment, has the potential for the mitigation of these effects been discussed?
37	Description of Mitigation		Have the measures that the Developer has proposed to implement, in order to mitigate effects, been clearly described and is their effect on the magnitude and significance of impacts clearly explained?
38	Description of Mitigation		Do the Mitigation Measures cover both the construction and operational phases of the Project?
39	Description of Mitigation		Have the responsibilities for the implementation of mitigation including roles, responsibilities, and resources been clearly defined?

No	Section	Sub-Section	Review Questions
40	Description of Monitoring Measures		Where adverse effects on any aspect of the environment are expected, has the potential for the monitoring of these effects been discussed?
41	Description of Monitoring Measures		Are the measures, which the Developer proposes implementing to monitor effects, clearly described and has their objective been clearly explained?
42	Description of Monitoring Measures		Have the responsibilities for the implementation of monitoring, including roles, responsibilities, and resources been clearly defined?
43	Description of Monitoring Measures		Have arrangements been proposed to monitor and manage residual impacts?
44	Quality	Quality of presentation	Is the document(s) logically organised and clearly structured, so that the reader can locate information easily?
45	Quality	Quality of presentation	Does the presentation make effective use of tables, figures, maps, photographs, and other graphics?

No	Section	Sub-Section	Review Questions
46	Quality	Quality of presentation	Does the presentation make effective use of annexes or appendices to present detailed data that is not essential to understanding the main text?
47	Quality	Quality of presentation	Are all analyses and conclusions adequately supported with data and evidence?
48	Quality	Non-Technical Summary	Does the EIA Report include a Non-Technical Summary?
49	Quality	Non-Technical Summary	Does the Summary provide a concise but comprehensive description of the Project, its environment, the effects of the Project on the environment, the proposed Mitigation Measures, and proposed monitoring arrangements?
50	Quality	Expertise	Is the competency of experts, who are responsible for the preparation of the EIA Report, indicated or otherwise explained in the EIA Report?

(European Union, Guidance on the preparation of the Environmental Impact Assessment Report, 2017)