Effectiveness of environmental impact assessment process in the Maltese Islands

Romina Sciberras
James Madison University

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EFFECTIVENESS OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS IN THE MALTESE ISLANDS

BY

ROMINA SCIBERRAS

A DISSERTATION SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENTS OF THE MSC. SERM

FACULTY OF UNIVERSITY OF MALTA

JAMES MADISON UNIVERSITY

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ABSTRACT

A successful Environmental Impact Assessment (EIA) helps in contributing effectively to all spheres of sustainability namely environmental, social, cultural, and economic spheres. The objective of this study is to explore the extent of use in the EIA tool, to analyse the effectiveness of EIA throughout the entire cycle of the process focusing on the prediction and mitigation of impacts, public participation, monitoring and follow-up, and to assess the strengths and weaknesses of EIA in the Maltese Islands based on feedback from a variety of stakeholders involved in the named process, and to identify gaps and/or factors which limit effectiveness. The national EIA legislation of the Maltese Islands is valid and sound and is also in line with the European Union Directives but is weak in implementation. Notwithstanding a number of EIA strengths, there is a large number of shortcomings which unless addressed and solved blunt EIA effectiveness. These shortcomings stem from inadequate and half-hearted enforcement throughout the whole EIA process particularly in the follow-up stage which practically determines whether an EIA has reached its sustainability objectives or not.

Keywords: Environmental Impact Assessment, Maltese Islands, EIA effectiveness, EIA process, sustainability spheres, prediction of impacts, public participation, mitigation, monitoring, follow-up, enforcement.
DECLARATION OF AUTHENCITY

I, hereby declare that I am the legitimate author of this dissertation on:

EFFECTIVENESS OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS IN THE MALTESE ISLANDS

Being presented in part fulfilment of the requirements for the degree of MSc. SERM at the University of Malta and James Madison University. I do hereby confirm that no portion of this work has been submitted in support of an application for another degree or qualifications of this or any other university or institution of learning.

Romina Sciberras (34489G)
April 2013
To those,

who encouraged, inspired and motivated me

to reach for my dreams.

“Develop success from failures. Discouragement and failure are two of the
surest stepping stones to success.”

Dale Carnegie
ACKNOWLEDGEMENTS

This study could have never been realised without the help from a number of people who helped me to complete this study. I would like to express my appreciation to all those who were in some way or in another have assisted her in the preparation of this dissertation.

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<thead>
<tr>
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<th>Full Form</th>
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<tbody>
<tr>
<td>AM</td>
<td>Adaptive Management</td>
</tr>
<tr>
<td>CE</td>
<td>Cumulative Effect</td>
</tr>
<tr>
<td>CEA</td>
<td>Cumulative Effects Assessments</td>
</tr>
<tr>
<td>EC</td>
<td>European Community</td>
</tr>
<tr>
<td>EDPA</td>
<td>Environment and Development Planning Act</td>
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<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Planning Act</td>
</tr>
<tr>
<td>EPD</td>
<td>Environmental Protection Directorate</td>
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<tr>
<td>EPS</td>
<td>Environmental Planning Statement</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>MEPA</td>
<td>Malta Environmental and Planning Authority</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
</tr>
<tr>
<td>PDS</td>
<td>Project Description Statement</td>
</tr>
<tr>
<td>ToR</td>
<td>Terms of Reference</td>
</tr>
<tr>
<td>UNECE</td>
<td>United Nations Economic Commission for Europe</td>
</tr>
<tr>
<td>VEC</td>
<td>Valued Ecosystem Components</td>
</tr>
</tbody>
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Chapter 1

INTRODUCTION
Chapter 1

Introduction

1.1 Background to the topic

An Environmental Impact Assessment (EIA) is a project specific tool used to identify and assess the actual and potential environmental impacts of a project, before this commences (CDRG, 2012). EIA is applied to the potential foreseeable effects of development projects and is a primary tool for environmental management to ensure the minimisation, avoidance or rehabilitation of impacts of development (FAO, 2011). It should be undertaken throughout the whole project cycle starting in the concept design phase, and as per good practice principles, should involve the public directly affected or with an interest in the project and/or its environmental impacts. An EIA is not limited to the consideration of environmental impacts, but may also address social and health risks, together with cumulative and long-term impacts, and the process should also consider the sustainability of resource use, as well as matters relating to productivity, assimilative capacity and biological diversity (UNEP, 2002).

The process of EIA is intended to contribute towards environmentally sound decision-making, and to the design and construction of acceptable developments (CDRG, 2012); the latter point is established through follow-up requirements for the project implementation phase, emerging from studies conducted during the impact assessment phase [UNEP, 2002]. The outcome of an EIA process is a formal document, based on the collection and analysis of relevant information, explaining baseline conditions, predicting likely environmental impacts of a development and envisaged changes in those baseline conditions (MEPA, 2012), as well as making recommendations for any necessary changes to the project design, and providing recommendations for other mitigation and monitoring measures (UNEP, 2002).

The EIA process embodies the precautionary principle, advocated in the Rio Declaration on Environment and Development - P.15 states that this principle ‘shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.’ (A/CONF.151/26). Decision-
makers use the Precautionary Principle when there is uncertainty in prediction due to lack of accurate data or complex systems, and this is also implemented in the management of risk (EC, 2000). EIA should also take into consideration project alternatives and identify ways to improve project selection, siting, and planning design and implementation. Prevention, minimisation, mitigation and compensation for environmental impacts will lead to such an improvement (UNU-GTP and KenGen, 2007).

1.2 How is EIA implemented in Malta?

The national strategy, the Structure Plan for the Maltese Islands (Planning Authority, 1990) and, the new Environment and Development Planning Act (EDPA), 2010 (Chapter 504 of the Laws of Malta) are the principal sources of environmental law and policy in Malta. Since becoming an EU Member State in 2004, various European Community Directives have also been transposed into local law, including the European Community’s EIA Directive (85/337/EEC)\(^1\).

MEPA which was set up in the early 1990s under the Planning and Development Act (Chapter 356 of the Laws of Malta) (since repealed by the above-mentioned Environment and Development Planning Act), is a statutory body, independent from the Government, which controls planning and environmental issues in Malta, and which is the competent authority with responsibility for enforcement of a range of planning/environmental management laws. It also became responsible for performing the duties established in the Environmental Impact Assessment Regulations, 2007 (L.N. 114/2007), with this legal notice transposing the requirements of the EIA Directive into Maltese law. Other authorities with competencies for enforcement of planning/environmental issues include the Malta Maritime Authority, the Malta Resources Authority, the Executive Police, the Local wardens and other state entities (Scerri-Diacono, 2008).

MEPA requires a developer to undertake an EIA in particular cases. Although projects needing an EIA, which can either be of a full environmental impact assessment by the

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preparation of an Environmental Impact Statement (EIS) or a limited environmental impact assessment by the preparation of an Environmental Planning Statement (EPS), are listed in the EIA Regulations 2007 (L.N. 114/2007), MEPA can also request an EIA for any development that it considers as posing risk of significant environmental impact (EPA, 2007). Before the submission of the Project Description Statement (PDS), the applicant may choose to submit an Environmental Scoping Statement to the Director of Environmental Protection, describing the environmental characteristics of the project and the project environment (L.N. 114/2007, 6.2.a) and outlining the potential constructional and operational impacts of the project (L.N. 114/2007, 6.2.b). This statement (LN 114/2007, 6.4) and the compilation of the EIA Report are prepared by independent consultants commissioned by the applicant, and who should be registered as EIA Coordinators. However the Consultants’ Register described in the Legal Notice has not yet been established. Following is the Screening stage which determines whether a proposal requires an EIA study; if this is the case, Terms of Reference (ToR) are then prepared, through a scoping exercise, to which the public is invited to contribute. The Director of Environmental Protection involves the public so the public may come up with issues to be included in the ToR by sending their comments to the Environmental Assessment Unit or/and may also convene a public hearing for the same purpose.

Before formulating the ToR, the Director of Environment Protection considers all foreseeable environmental impacts taking into consideration the information contained in the Project Description Statement; in fact, the Terms of Reference determine the specific environmental sectors for which relevant specialist studies need to be conducted. During this stage the alternatives to be examined, the direct and indirect effects to be considered, the structure and specifics of the particular EIA report and the methods to be used to predict environmental effects are established. The Director makes the final TOR public by including the public’s comments in the Environment Protection Directorate (EPD) Reports. The team of consultants engaged to work on the EIA then gathers data and compiles reports based on the established requirements of the Terms of Reference. Impacts are identified and appropriate mitigation measures are presented (MEPA, 2012).
The EIA findings are incorporated in an Environmental Impact Statement (EIS) or an Environmental Planning Statement (EPS), with the two differing in the scope of work. The EIA Regulations provide for formulation of an EIS for larger development projects falling under Category IA of EIA Regulations, and for formulation of an EPS for projects which are likely to produce limited and easily assessed impacts and which fall under Category II of
Schedule IA of EIA Regulations (MEPA, 2012). A typical EIA report describes and assesses the proposed development project, alternatives to it, the characteristics of the site of the proposed development, the development’s potential impacts (positive and negative), mitigation measures and monitoring of actual effects after the project’s completion.

The EIA report is then assessed by Malta Environmental and Planning Authority (MEPA), which also takes into consideration the views of the public and other stakeholders. The ultimate decision-making processes related to the planning application in question should be based on the findings of the EIA. When the proposed development is approved, developers have to abide by specified conditions and post-permit monitoring, which are also based on the findings of the EIA (MEPA, 2012).

1.3 Why is EIA important in the Maltese context?

EIA in Malta originated in an EIS commissioned by the Department of Environment about the Delimara power station project in 1987. Despite its shortcomings, it was a milestone because it was an efficacious substitute for the arbitrary ministerial discretion that had characterised major infrastructural development to date. The Environmental Protection Department initiated the first proper EISs selecting four (4) pilot projects in 1989. Land use planning was revolutionised in Malta by the finalisation of the Malta Structure Plan and the setting up of the Planning Authority in 1990. Formal EIA guidelines were published by the Planning Authority in 1993 (Role, pers. comm.). The EIA process in Malta was initially focused primarily on environment and biodiversity due to spatial vulnerabilities and unique ecological and biodiversity characteristics. These echo the objectives set up by Douglas (2011). Only recently has EIA process in Malta begun giving due attention to social impacts and human health impacts.

Given the environmental pressures created in Malta by the density of the population (1322 person/ m²) (NSO, 2011) and intense influx of tourists (1.3 million tourists spent 7.3 million nights in Malta in 201) (NSO, 2012), there arose the inevitable need to establish environmental management procedures, such as EIA, to stop or at least minimise the
deteriorating environmental condition and the unsustainable exploitation of natural resources which threaten ecosystem functioning and cause land, sea and air degradation.

Malta, like other small islands, has limited resources and inevitably depends excessively on international trade and specialisation, which renders it vulnerable to global developments (A/CONF.167/9). Overuse of resources, expensive administration, infrastructure transportation and communication, together with limited domestic markets and export volumes lead to reduced competiveness. These factors entwine development and environment hence making sustainable development a major issue for survival. Since the biological diversity of small islands is threatened by isolation and fragility of their ecosystems, the environment and people’s livelihood requires protection and integrated management of resources. Malta is too small to provide important scale economies (A/CONF.167/9).

Sustainable development of small islands has to address these constraints to development through integration of environmental considerations and natural resource conservation into social and economic development policies. Economic development should not undermine social, religion and cultural values. Small states should strive to cope sustainably with environmental change and reduce negative impacts effectively (A/CONF.167/9). In small islands economic and social activities tend to focus on coastal fringe and tourism puts a tremendous pressure on their limited resources (UNEP, 1999) and on elements of their environment beyond their carrying capacity thresholds (Holsh, 2000). A properly managed EIA system deals effectively with tourism growth and the safeguarding of the natural environment, and helps sustainable tourism.

EIA aims to protect the environment in concrete cases at project level by providing scoping advice and EIA quality review, and to enforce legislation in favour of the environment at system level by advising on EIA legislation and building capacity. Indirect learning can be achieved at system level and lead to EIA adjustment to fit particular contexts better (Cherp and Antypas, 2003; Kolkoff, 2009). EIA is most effective when it results are considered in decision making (Wood, 2009; Zubair, S., et al., 2011), forces developers to consider environmental impacts and ensure mitigation measures.

Since experience with EIA in Malta was relatively limited, it could not be effectively evaluated and reviewed, because it had not yet passed the test of time and matured from both governmental and societal perspective. Now that twenty years have passed since the
inception of EIA in the Maltese environmental legislation, the time is ripe to assess its effectiveness and see to what extent theory has been put into practice and if its objectives are being attained. There is no doubt that the EIA legislation is sound and valid, as it is based on long-established concepts of sustainability and on a framework of EU legislation, but there may be shortcomings in the way regulations are applied in practice. These infringements and inconsistencies in implementation may be the result of a variety of factors.

As a sustainable development tool, EIA has an important role to play to strike a needed balance between environmental conservation and economic growth and cultural/ social preservation. However the time has come for EIA to be implemented in an effective and consistent way. The EIA has to be procedural, i.e. conform to established legislation and substantive, i.e. achieve its objectives, and transactive i.e. deliver the outcome in the least expensive and time consuming way (Morrison-Saunders and Retief, 2012). The legislative body is valid and has a strong sustainable mandate but implementation has to be efficient. The socio-economic and political situation should not interfere negatively with EIA performance. Instead of remaining a rigid complex legislation, EIA should be flexible to ensure improved practice (Morrison-Saunders and Retief, 2012). Attention should also be given to smaller development projects although this does not mean that excessive resources are expended on minor impacts (Zubair, Bowen and Elwin, 2011).

On one side Malta is highly sensitive to environmental problems such as marine and coastal resource degradation and industrial pollution (Lohani et al., 1997). On the other hand, Malta has a narrow economic base and depends on larger countries and on tourism. Tourism is the mainstay of Malta’s economy but it leads to development of coastal areas and infrastructure both in coastal areas and elsewhere, and quarrying. Therefore Malta faces the problem of developing tourism and industry, whilst seeking to preserve the natural environment and limit negative impacts such as pollution and waste generation. The objective of EIA objective is to contribute towards ‘solving’ this dilemma and help in the attainment of sustainable development (Glasson, J. et al., 1999).
1.4 **Justification**

EIA has the international recognition of being a key tool leading to sustainable development (Talime, L.A., 2011). It has turned out to be a resilient regulatory instrument which has withstood and survived the test of time. Research in several countries, both in developed (Lithuania, Estonia, and Australia) and developing countries (Maldives, India, Lestoho), shows that EIA is effective and justified if practised in an appropriate way.

This study sets out to investigate if EIA is anticipatory, participatory and systematic in investigating the sustainability dimensions (environmental, social, cultural, economical) of proposed developments in advance to protect the environment (Miller, 2003) and if it identifies the need to redesign after the first consideration of impacts (Zubair, S., *et al.*, 2011) in the Maltese context.

EIA has achieved success in generating and exchanging information (Macintosh, A., 2010), in seeing that process in promoting discursive modes of decision and in providing for stakeholders’ negotiation. Deliberative democracy model EIA promotes ecologically (Talime, L. A., 2011) rational thinking and decision-making by encouraging meaningful exchange of view and information. It also has left a considerable impact on the protection of environment and in the promotion of sustainable development (Eliott and Thomas, 2009 and Jay *et al.*, 2007). Besides, Macintosh (2010) and Chistensen, Kornov and Nielsen (2005) found out that EIA generate indirect benefits.

1.5 **Aim**

Given the paramount need and vital importance of an effective planning tool to contribute towards sustainable development in Malta, this study aims to explore the effectiveness of the EIA process in Malta through an understanding of factors which may have an influence on the effectiveness of EIA process, focusing on (i) the influence of the EIA process on planning decisions, (ii) EIA’s attempts to achieve environmental sustainability, and (iii) the extent to which EIA is influencing decision making.
1.6 Objectives

The study thus has the following objectives:

- To assess strengths and weaknesses of EIA in Malta, based on feedback from a variety of stakeholders involved in the process;

- To identify gaps and/or factors which limit effectiveness.

- To explore the extent of use of EIAs’ contribution to modifying project design/implementation through mitigation measures which minimise environmental, social, economic, cultural, and health impacts of a negative nature.

- To analyse the effectiveness of the EIA throughout the entire cycle of the process (focusing on the prediction and mitigation of impacts, public participation, monitoring and follow-up);

1.7 Synopsis

Chapter 2: Literature Review. This chapter reviews literature relevant to understanding the effectiveness of the EIA process, with a focus on (i) the application of the EIA system; (ii) the rationalist dimension; (iii) its contribution to sustainability; (iv) the limitations of the EIA process (v) the effectiveness of the EIA system; (vi) main principles of EIA; (vii) mitigation measures; (viii) cumulative impacts; (ix) public participation; (x) decision-making, and follow-up.

Chapter 3: Methodology. This chapter will explain the methodology used for this study, including details of data gathered, sources used and respondents interviewed.
Chapter 4: Results and Analysis. This chapter will present results of the study, relating to the effectiveness of EIA practice in Malta.

Chapter 5: Conclusions and Recommendations. Finally, this chapter will outline the conclusions drawn by the author and highlight key recommendations emerging from this study.
Chapter 2

LITERATURE REVIEW
Chapter 2

Literature Review

2.1 Introduction

Fast growing environmental awareness worldwide and the emphasis being placed on sustainable environmental development have prompted the emergence of Environmental Impact Assessment (EIA) as the appropriate mechanism to ensure environmental sustainability.

EIA is a systematic cyclical process which examines the environmental consequences of planned development in advance (Glasson et al., 1999) and has become mandatory to all European Union Member States as of 1988, through the implementation of Directive 85/337/EEC which was amended by Directive 97/11/EC\(^2\), Directive 2003/35/EC\(^3\) and Com/2009/0378\(^4\). Annex I of EIA Directive 85/337/EEC described developmental projects which needed a mandatory EIA while Annex II lists projects which need to be screened before a decision about the need for an EIA is taken. Directive 97/11/EC increased the types of projects requiring mandatory EIA and added more screening criteria. Directive 2003/35/EC dealt with increased public participation while Directive 2009/31/EC\(^5\) added projects related to transport, capture and storage of carbon.

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dioxide. These directives were codified by Directive 2011/92/EU. In July 2009 the EU Commission published a report on EIA (Com/2009/378) evaluating the strengths and weaknesses of EIA, and launched a wide public consultation in 2010. This led to a Conference on 18-19 November 2010 which concentrated on the scope of EIA Directive, the quality of the EIA process and links between EIA and relevant international conventions (European Commission, 2012).

The latter Conference recommended that (i) scoping should be required where the developer or the CA requests; (ii) mandatory scoping should be considered for Annex I projects; and (iii) non-protected environmentally sensitive areas should be taken into account. As regards the quality of the EIA information, guidelines contents of reports should be commissioned and better linkages between EIA and INSPIRE Directives should be established. According to the European Commission the key objective of public participation should be to ensure effective participation at the right stage and to provide the public with the opportunity to comment on possible alternatives. As far as monitoring is concerned the Commission recommended that EIA should identify situations in which monitoring is appropriate and the need to clarify who should be provided with monitoring data (European Commission, 2012).

### 2.2 The scope of EIA

EIA has emerged namely due to increasing environmental awareness and concern, the deeper understanding of science and technology by society or normative rationalist view, and the growth of protest culture, which encouraged public participation in environmental decision-making (Weston, 2004). The immediate objectives of EIA are to better the environmental design of the proposal, make sure of appropriate and efficient use of resources, identify appropriate mitigation measures, facilitate informed decision-making, and create the opportunity for greater participation of the public in decision-making processes. EIA’s consideration of social, economic and environmental factors leads to transparency (Pope et al., 2004). The long term objectives of EIA are the protection of human health and

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6 DIRECTIVE 2011/92/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment
safety, reduction of the risk of irreversible negative changes and grave damage to the environment, protection of natural areas, ecosystem components and valued resources, and enhancement of the proposal’s social aspects. \textit{(Refer to Table 1)}. 

<table>
<thead>
<tr>
<th>Environmental impacts can vary in:</th>
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<tbody>
<tr>
<td><strong>Type</strong></td>
<td>biophysical, social, health or economic</td>
</tr>
<tr>
<td><strong>Nature</strong></td>
<td>direct or indirect, cumulative, etc.</td>
</tr>
<tr>
<td><strong>Magnitude or Severity</strong></td>
<td>high, moderate, low</td>
</tr>
<tr>
<td><strong>Extent</strong></td>
<td>local, regional, transboundary or global</td>
</tr>
<tr>
<td><strong>Timing</strong></td>
<td>immediate/long term</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>temporary/permanent</td>
</tr>
<tr>
<td><strong>Uncertainty</strong></td>
<td>low likelihood/high probability</td>
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<tr>
<td><strong>Reversibility</strong></td>
<td>reversible/irreversible</td>
</tr>
<tr>
<td><strong>Significance*</strong></td>
<td>unimportant/important</td>
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\*Impact significance is not necessarily related to the impact magnitude. Sometimes very small impacts, such as the disturbance of the nest of a pair of endangered birds, may be significant. When determining the significance of the potential impacts of a proposal, all of the above factors should be taken into consideration.

Table 2.1 Typology of environmental impacts - EIA Training Resource Manual, 2002

EIA influences environmental management indirectly by stimulating changes in institutional environmental capacity, politics, values and accountability, rather than directly through decision processes (Caldwell, 1993). It has an educational and model-like role, promotes stakeholders’ empowerment through involvement in environmental decision-making and increases transparency. It also contributes to changes in society’s expectations of democracy and development (Meadows \textit{et al.}, 1992). EIA also helps promote interdisciplinary environmental science and principles of environmental management (Sadler, 1996), and increases awareness of resource constraints, uncertainty and the need of stakeholder involvement and other realities of environmental management. (Cashmore, M., \textit{et al.}, 2004).

Notwithstanding the fact that EIA has been around for fifty years, attention is not being distributed evenly on all the factors envisaged in EIA. EIA reports have been compiled on a
set of scientifically established rules by experts. However, this system has not been fool proof and by time the public’s role has increased in the decision-making process. This public participation has opened up the way for a wider discussion and for the inclusion of a number of economic and social factors.

2.3 Rationalist Dimension

The lack of consensus in the way emphasis is placed on particular factors is probably related to the shift from the rationalist decision-making model which emphasised a direct influence on decision-making, to the behavioural or political model which focuses on environmental education, institution changing and building consensus (Jay et al., 2007). A rational decision is defined as one based on a full understanding of the consequences of all relevant alternatives (Nilsson and Dalkmann, 2001). EIA fits in the rationalist theory because its legitimacy is based mostly on its systematic procedural process and the scientific methods that experts make use of in environmental impact prediction. Expert opinion is the backbone of EIA (Kontic, 2000). Since EIA is a systematic, scientific and objective assessment, the public has to trust the experts and believe in science, and the proponents of the development project have to act against their economic interests when necessary. However, these requirements are rarely fulfilled (Weston, 2003). Environmental concerns and environmental assessments are value-based since they may favour the interest of one group and may go against the interests of another group at the same time (Weston, 2003). Besides the public does not build its credibility of expert opinion on a scientific basis because they are not yet in a position to evaluate expert opinion in a scientific way. The rationalism of society is being eroded by the loss of respect and trust in government experts, politicians and decision-making framework (Oosterveer, 2002). Lack of objectivity in the assessments, complexities of the material produced, the inherent conflict of interests and values, and lack of public involvement in the early stages of EIA process, are eroding the rationalism of society and paving the way for a risk society (Weston, 2003).

However, on the other hand the rationality dimension envisages a logical, coherent and comprehensive EIA approach (Lee et al., 1999) which emphasises how decision-making
should take place rather than how it does take place (Cashmore, M. et al., 2004). It does not consider how information is interpreted and used by decision makers. Besides, the political character of decision processes further detracts from its validity and compromises, and the involvement of stakeholders means that there are power relationships and vested interests in play (Cashmore, M. et al., 2004). EIA may become a tool used to influence outcomes by subtly changing the norms and values that govern decision-making (Bartlett, 1986) by facilitating useful debate on environmental policy issues and by making decisions transparent (O’Riordan and Sewell, 1981).

There is no doubt that the rationalist dimension of EIA is valid, but there is also a strong element of political decision-making. Rational and political decision-making are not mutually exclusive (Heinma and Poder, 2010). In fact most interpretations of EIA focus on the rationality dimension, the decision dimension and the sustainability dimension.

2.4 **EIA as a contributor to sustainability**

Significant attention is nowadays being placed on sustainable development. Sustainable development has become a global imperative (Quental et al., 2011). Peaks in political activity for sustainability coincided with the 1992 Earth Summit and Earth Summit 2002. Sustainable development is thought to be extremely important for higher levels of decision-making (Benson, 2003). EIA is one of the environmental assessment tools identified by Sheate (2009), the objective of which is the achievement of sustainability. However, whether this potential for EIA to contribute to sustainability is being realised, is perhaps in question.

Sadler (1999) emphasises the potential of EIA to contribute towards achieving the principle of intergenerational equity and to conserve critical capital, except in cases in which social needs are overriding. EIA should strive to find ‘in kind’ compensation which should make good for capital losses in ‘non critical’ natural capital. However, empirical research shows that the majority of stakeholders believe that EIA only influences consent and design decisions moderately. According to Cashmore, M., et al., (2004) and Sadler (1996), EIA is ineffective in minimising impacts, avoiding irreversible impacts, facilitating sustainable
development and influencing informative decisions, but it influences consent conditions. EIA only leads to minor modifications like proposals for impact mitigation which may be rendered outdated by design changes made after certification of the EIA report (Cashmore, M. et al., 2004). Commonly, decision makers tend to give more attention to stakeholders’ involvement than to consultative opinions presented in the EIA, because the latter may be biased in favour of the sponsoring developers (Gwilliam, 2002). Wilkins (2003) also found that subjective opinion and values are given priority in environmental governance in many countries.

Although sustainability is the principal aim of EIA (Petts, 1999), there is little empirical research concerning whether EIA contributes to this ideal in practice (Cashmore et al., 2004). There is yet little systematic consideration of the relationship between EIA and the concept of sustainability. The absence of a definition of the concept of sustainable development is one of the potential reasons for this limitation (O’Riordan, 2000). This absence places sustainable development ‘at the threshold of self-dissolution in arbitrariness and irrelevance’ (Ninck, 1996 p.30). Resulting different interpretations of sustainable development from project to project reflect a lack of conceptual frameworks (Plachter and Warner, 1998), with implications for the way in which the EIA process is administered. Project-based EIA is often the only available sustainability-oriented tool in place (Hacking and Guthrie, 2008). Such EIAs aim at environmental protection through influencing tangible decisions (de Jong et al., 2012). They tend to reduce environmental harm rather than attain sustainable development (DEA, 2011a). As there is an increasing demand internationally for EIA to move closer to sustainability assessment, EIA today has a strong sustainability mandate. The appropriate enabling legislation is in place but translating this into practice may leave much room for improvement (Morrison-Saunders, A. and Retief, F., 2012).

The aim of EIA should be to achieve context specific sustainability objectives (Audovin and De Wet, 2010) through flexibility in procedural design and integrative thinking (Audovin and Hattingh, 2008). It is not enough to have a sound policy and legal content, and include sustainability as an EIA objective. Legislative frameworks may lead to the legalistic and mechanistic ‘straight jacketing’ of assessment processes. When this happens, assessment becomes lifeless and bureaucratic as it moves away from flexibility (Kiold and Retief, 2009). What is needed is a conscientious, intelligent and practical adoption of criteria applicable to a particular developmental project. The gap between the policy framework and application in practice must be filled. Emphasis must shift from legal
reform towards a pragmatic approach which leads to system intervention and which aims to enhance environmental protection through the institutional context (Kolfoff, 2009). Sustainability must be entrenched into normal EIA thinking and processes in order for substantial sustainable development improvements to be achieved (Morrison-Saunders, A. and Retief, F., 2012). Only in this way will a balance be struck between economy, ecology and social aspects to achieve sustainable outcome (Bond, A. J. et al., 2010). In fact Goodland and Daly (1996) stated that the ‘triple bottom line approach’ of ecological, social and economic sustainability is being widely accepted more than before. However, according to Gasparatos, A., et al. (2008), the integration of economic, environmental, social and institutional issues, in practice consideration of the consequences of present actions, and public engagement remain the major challenges for sustainability. Another problem is sustainability’s dynamic nature which depends on cultural, social and moral values of individuals (Bosshard, 1997) – these values may also come to influence the EIA process. These values ought to be assessed and evaluated and then taken into consideration for each developmental project.

Figure 2.1 Sustainability Domains
2.5 The Effectiveness of EIA

Having seen in the previous sub-section that EIA has still a long way to go to achieve the objective of sustainable development mostly due to lack of flexibility, the discrepancy between legislation and implementation of this legislation, and real consideration of cultural, social and moral values of individuals, it is useful to delve into whether EIA is truly effective in achieving its aims.

Sadler (1996) identifies four criteria for an evaluation of effectiveness, namely the quality of EIA reports, the effect of the process on decision-making, the effectiveness of prediction of impacts, and monitoring and post-auditing. Glasson et al., (2005), on the other hand, argue that EIA is effective if it helps decision makers and the developer, and achieves sustainable development. An EIA system is effective if it minimises the probability that projects with significant environmental effects are implemented, by establishes whether developmental consent should be granted (Wood, 2003) and if it provides decision-makers with essential information. EIA effectiveness may be measured in terms of involved actors’ satisfaction with EIA results (Deelstra et al., 2003), on the basis of the research team’s interpretation of the meaning of effectiveness (Cashmore et al., 2004), through the quality of the EIA report and EIA procedural implementation, and the viability and the role of EIA in factual development planning (Hacking and Guthsie, 2008). These assessments should lead to a sustainable form of development which balances economic, social and environmental requirements (Glasson et al., 1999).

On one hand EIA has to be thorough to help attain its objective and ensure the quality of overall decision-making (Stookes, 2003), while on the other hand it tends to take too much time and involves a very heavy economic burden (Annandale and Taplin, 2003). As Snell and Cowell (2006) point out, there is a conflict between the need to reduce perceived burdens on economic growth, and those who want EIAs to be more effective in promoting environmental sustainability. However Wood et al. (2006) rightly point out that potentially significant impacts should be given due attention, while minor impacts should not be dealt with so deeply. EIAs should address the problem of timeliness and unnecessary delays (Middle, G. and Middle, I., 2010). This does not mean that projects with minor impacts should be taken lightly. First of all the minor impacts of several projects may add up to a very large cumulative sum total of negative impacts. Secondly shortcuts are not always
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rewarding. Garry Middle and Isaac Middle (2010) conduct an analysis in response to criticism that the West Australian EIA process is too long and expensive. In Western Australia, quick EIAs are used for proposals that have little public interest and only a few environmental impacts. They consist in the informal combination of first four phases. Due to the informal nature of the quick EIA, it is difficult to identify the time taken for each step. However hasty and reduced scoping can easily lead to delays in later on phases and reduce the legitimacy the assessment (Middle, G. and Middle, I., 2010).

Although according to Glasson et al., (2005) EIA has improved in the environmental management of developmental action, environmental management is also highly influenced by the socio-economic and political situation in developing countries. In the West, on the other hand, environmental policies resulted from the pressure environmental movements placed on governments. In the West bottom-up initiatives coming from social movements are possible while in developing countries top-down initiatives have been undertaken to be in line with Western development, and not out of conviction (Marara, et al., 2011). Countries with severe social problems and poor economic systems arguably need a more flexible EIA system than industrialised countries need (Marara, et al., 2011). An EIA system may also be sound but have its performance effected negatively by its respective contextual set up. In developing countries EIA systems are hampered by countries’ need to grow fast economically and eliminate poverty, and achieve the Millennium Development Goals (UN, 2005b).

Research in Kenya, Rwanda and Tanzania shows that increasing mass tourism is driving these countries to enhance wild life and develop game reserves. EIAs in these countries are not performed out of conviction and environmental necessity but they are artificial as their purpose is to make the countries seem to run on the same lines as Western countries. Governments in developing countries are more interested in the current needs and aspiration of the present and face more challenges than developed countries do. Therefore the researchers concluded that a more flexible EIA is needed to deal with severe social problem and poor economic systems (Marara et al., 2011). It is clear that in East Africa, the socio-economic and political situation interferes heavily with EIA performance as the current needs are considered to be much more important than sustainability development.

In the Maldives the tourism industry which contributes over 30% of the total GDP depends on the island’s marine life and beaches. Researchers found that EIAs in the Maldives are
seriously deficient as the conventional EIA process is not adopted precisely and thoroughly. One shortcoming is that the public and affected parties are not involved at the initial stages of the planning process and at specific stages throughout the whole EIA process. The EIA outcome is not understandable by individual stakeholders, tourism industry association NGOs, Government Ministries and statutory bodies. Economic, socio-cultural and ecological carrying capacities have to be assessed properly through information on baseline conditions (Zubair, S., Bowen, D., Elwin J.,(2011).

A research in Lithuania concentrated on the subjectivity in forecasting environmental effects, not enough attention being given to alternatives, politicisation of the process and authority incompetence. Researchers found that active public participation is highly considered in EIA process, and the public is given ample opportunity to make suggestions and defend their opinion. However the public is poorly informed and not much interested. Another drawback is that local councils can stop a project even if they do not base their decision on expertly advice. Researchers proposed that only those with a professional licensing can prepare EIA documentation. They also found that socio-economic analysis, biodiversity and natural resources are not given due attention in EIA process, that an EIA practitioner sides with the developer as it is the developer who pays for his services, and there is no proper methodology for evaluation impacts on landscape. The legislation and public participation are valid but implementation has many shortcomings. Researchers recommended that local councils reach conclusions based on specialists’ opinions that guidelines for involvement of EIA regulatory officials and staff training should be implemented, and a network of experts capable of improving EIAs should be built (Kruopiene, J., Sidoniene, S., Dvarioniene, J., 2009).

According to UNEP (2002), EIA is essentially problem solving, and highlights the means for improved quality control and provides the basis for improved practice and management. EIA helps in making informed decisions, helps the public to understand proposed development’s impacts, and aid the proponent in managing impacts (UNEP, 2002). However there is concern about the effectiveness of the process (Heinma and Poder, 2010) and this called for modification or tinkering with the controlling legislation (Retief and Chabala, 2009). Canada, Australia and South Africa have reviewed their EIA systems (SCESD, 2011) and the 2007 EIA EU Directive has been reviewed under the title of ‘Better regulations for jobs and growth (European Commission, 2010). The weaknesses typically addressed relate to public participation, methods used, capacity of involved authorities, and prediction of impacts (Peterson, 2010).
Attempts to reform the legal arrangements for EIA do not guarantee improvements. EIA often fails to deliver more sustainable outcomes because of complex and rigid legislative regimes which should give way to flexibility in the EIA system, and innovation and creativity in decision-making (Sandham, L. A. et al., 2013). For example, the South Africa 2006 review of the 1997 EIA regime has not led to improvement. The modifications led nowhere. Since the 1997 regulations resulted in a drawn-out and expensive administrative procedure due to comprehensive scoping and extensive public participation, the 2006 regulations excluded coverage of projects needing EIA, instituted timeframes, provided for post decision follow-up and introduced a Basic Assessment for smaller projects and Full Assessments. More comprehensive information was required by the 2006 regulations. Research shows that impact identification and evaluation, and alternatives and mitigation remain weak aspects. Therefore researchers concluded that flexibility rather over-detailed regulation ensures improved practice. More training for role players and more guidance are needed. A registration body is needed. Emphasis on legal reform is misplaced and ineffective because very complex and rigid legislation do not lead to sustainable outcomes. Innovation and creativity are needed and these come through flexibility (Sandham, et al., 2013).

In spite of the above extensive reform, rigid legislation does not lead to sustainable outcomes. EIA is effective if it improves sustainability through knowledge acquisition, validation and integration. It must go beyond the legal guidelines and prescriptions and adopt an informal knowledge dimension based on how practitioners understand what sustainability means and on how they organise their practical routines (Bond, A. J., et al., 2010). EIA is also impeded by technical shortcomings, like lack of accuracy of impact prediction and not very effective mitigation and management measures, procedural limitations like inconsistent process administration and time delays, and structural issues like lack of coherent policy planning framework and systematic follow-up procedures (UNEP, 2002). Other limitations include inadequate assessment of alternatives, mitigation measures and their effectiveness, lack of public involvement and decisions taken to satisfy developers’ interests (Potschin and Haines Young, 2003). Since EIA depends on the individual understanding of the concept of sustainable development of different stakeholders (Cashmore, 2004), it is led by social and political choices (Hardi and Zdan, 1997).

EIA’s centrality to decision processes needs to be improved through increased political support (Wood, 2003), planning practices reform (McDonald and Brown, 1995) and stronger EIA legislation (Leu et al., 1996). It should also evolve to interact and interface with
decision-making. Decision-oriented practices are important both for the strategic tiers of decision-making and to individual decision-making for individual projects. The rationalist theory must be reinforced by the decision orientated theory. Kobus and Lee, (1993) and Wood and Jones (1997) found that EIA does not usually satisfy all the information requirements of consent decision makers because of diverging expectations.

An interdisciplinary approach is needed (Bond, A. J. *et al*., 2010). This approach encompasses the development of planning and learning processes, involving individuals, organisation and society (Scholz, R. W. *et al*., 2006). Integration of knowledge allows practitioners and decision-makers to work on a shared understanding of the issues.

EIA compilation also requires capacity development in decision-making institutions. Organisational structure, staffing and capacity development should be included in legislative provisions for EIA (Duthie, 2001). EIA reports should be written concisely and in clear and reader-friendly way and not in complex phraseology (Sullivan *et al*., 1996) so stakeholders can read and understand them. The length of EIA reports, which often include excessive and unnecessary data and difficult language, are discouraging decision makers from reading all through the reports (Crawley, 2002). To be effective EIA should be a creative and dynamic tool for environmental management (Abaza, 2000) and locational and technological alternatives must be identified (Bond, A. J. *et al*., 2010).

Screening, which determines whether or not a proposal should be subject to EIA, and if so, to what level (IAIA, 1999: European Commission, 2001), is the first level of a nation’s endeavour to secure its environmental system (Rajaram, T. and Das A., 2011). Very stringent screening will hinder the economic growth of a nation. On the other hand, absence of screening will lead to wastage of resources and destruction of life-support systems (Jones, C. E., 1999). For an EIA to promote development that is sustainable and to optimise resource use and management opportunities (IAIA, 1999), a rational screening process which tends towards a sustainable development strategy is needed. An effective screening approach should be based on environment centred and development centred approaches (Rajaram, T. and Das A., 2011).
2.6 **Mitigation Measures**

To develop economically, a country often has to exploit the environment. To achieve sustainable development, negative environmental impacts must, however, be avoided. However, in many cases huge development projects inevitably bring about negative environmental impacts. Therefore a balance between economic development and environmental conservation may be more realistically achieved through identifying negative environmental impacts and minimising them, seeking alternatives and enhancing the environment through development. Therefore mitigation is essentially the ultimate goal of EIA. However mitigation measures have to be effectively taken and not just be included in EIA reports and remain on paper (Rajvanshi, n.d.).

Mitigation is a mandatory requirement for EIA of certain types of development proposals as Article 5 of the European EIA Directive (85/337/EEC) requires a description of mitigation measures in the Environmental Impact Statement, while Article 10 of SEA Directive 42/2001/EC provides for the identification of unforeseen negative impacts and the undertaking of appropriate remedial action (Sheate et al., 2005). Mitigation is defined as ‘measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects’ in Directive 85/337/EC and should occur as an iterative part of the EIA process to address significant impacts identified in earlier stages. Rundcrantz and Skarback (2003) defined mitigation as something that ‘limits or reduces the degree, extent, magnitude or duration of adverse impacts’.

Since many countries are trying to promote economic growth while reducing environmental impacts, the main role of EIA is in practice to reduce and mitigate environmental impacts and at times compensate for these impacts (MEA, 2005). Mitigation and compensation in EIA enable better environmental protection, encourage sensible use of natural resources and avoid costly environmental damage by developing measures to avoid, reduce, remedy or compensate negative environmental impacts caused by development proposals (CEC, 1985), encouraging beneficial effects at low costs and creating opportunities for business through environmental conservation, sustainable livelihoods and human well-being.

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Compensation involves measures taken to replace lost or negatively affected environmental values. Cowell (2000) defined environmental compensation as ‘the provision of positive environmental measures to correct, balance or otherwise atone for the loss of environmental resources’ (Rajvanshi, A., p.167). New values will be created to make up for lost values and be equal to them or very similar to them.

A comprehensive address of environmental impacts should include mitigation and compensation as a sequence (UNEP, 2002) and should be taken into account as a hierarchy based on prevention consisting of avoidance, minimisation, rectification, compensation and enhancement measures (Refer to Fig. 3). However this mitigation hierarchy, which was developed in 1997 by Mitchell, is often sacrificed because it is generally more cost-effective and less controversial to reduce impacts rather than avoid them (DOE, 1997). The most effective mitigation approach is avoidance of adverse impacts early in the planning cycle through measures considering siting, design, process, technology, route alternatives and no-go options. The mitigation by reduction or limiting severity of impacts is used with the progressive phase of the development project by measures which reduce impacts or which limit the exposure of receptors to impacts. When impacts cannot be avoided or reduced, they are remedied towards the end phase of project implementation by measures taken to restore the environment to its previous equilibrium (Rajvanshi, A., n.d.)

![Figure 2.2 Hierarchy of Mitigation Measures](source: Modified from Rajvanshi, n.d.)

Adverse environmental impacts can be avoided by the identification of alternatives, sensitive design, environmentally sustainable technology, developmental restrictions in sensitive areas,
avoidance of key areas and application of the precautionary approach. The precautionary principle recognises the benefit of prolonging the decision-making process until the best information is obtained through stakeholders/experts’ participation and until this is consolidated so risks of serious or irreversible environmental harm are averted (Cooney and Dickson, 2006).

The degree, extent, magnitude and duration of adverse environmental impacts can be minimised by measures for preventing pollution, reduction of physical disturbances, ‘good housekeeping’, the installation of physical barriers, creative land management, technological fixes and compatibility. Remedy can be achieved by repairing, reinstatement, restoring and rehabilitation through native ecosystem reconstruction, reseeding of grassland, restocking reservoirs, restoration of damaged hydrological functions and reclamation of degraded sites after use. Negative impacts that are unavoidable can be compensated by on site compensation measures and off-site compensation measures (ten Kate et al., 2004). The most beneficial compensation measures are those that lead to genuine enhancement, create new opportunities for environmental conservation or lead to better resource management. In-kind compensation is best suited where there is significant or net residual environmental damage while out-of-kind compensation consists of payment for loss of land or of compensation packages (Rajvanshi, n.d.).

Mitigation is required at all stages of a development’s life. ‘Levels of mitigation’ include alternative locations or processes, physical design methods, management measures, and deferred mitigation (DETR, 1997). Mitigation measures have to be implemented to be effective and one of the implementation problems is lack of precision about specific mitigation measures. Such measures must be directly linked to specific contents of the EIA.

Planning conditions rarely cover all the aspects of project design and implementation because planning authorities often prioritise the measures they consider most important (DETR, 1997). Discarding what may be considered as minor environmental impacts may in the long term be ruinous, as more and more minor environmental impacts are discarded and left unaddressed. Criteria used to decide the degree or magnitude of environmental impacts may be subjective or deliberately integrated to please the contractor. Deciding to put aside minor environmental impacts becomes quite a serious decision in the cases of small developmental projects which are not eligible for an EIA as the number of such projects increases and so does the number of minor negative environmental impacts that go
unaddressed. The sum total of negative environmental impacts would turn out to be quite a massive environmental degradation. Another shortcoming is that due to the time lapse between submission of EIA and the granting of planning permission, the EIA may lose its effectiveness, as it becomes outdated. Avoidance of this requires more human resources. Capacity building is therefore of the utmost importance (Doberstein Brent, 2004).

Mitigation helps optimise economic benefits from development and at the same time resolve environmental and social problems. In fact, Patricia and Ernst (2007) found evidence that the practice of mitigation is taken up by a growing number of large scale developers. The use of Environmental Management Plans links Environmental Assessment reports and stipulated consent conditions. Mitigation measures described in EA reports are more likely to be implemented if technical details, justification of the proposed measures, time schedules for implementation and financial allocations are included in EMPs (Carroll and Turpin, 2002). An alternative to EMPs is a schedule of mitigation commitments which clarifies the measures a developer has to implement. This can be updated from time to time (Carroll and Turpin, 2002).

### 2.7 Cumulative Impacts

The concept of cumulative impact began to gain ground as society began to realise that an assessment of solitary effects on the environment, considered in isolation, does not capture the whole picture. Cumulative means growing by successive addition, whereas regulators and risk assessors consider cumulative risks and impacts as a set of stressors evaluated simultaneously (CalEPA, 2005). Cumulative impacts are the impacts on the environment that are the result from incremental effects of the project together with other past, present and reasonably foreseeable future projects (Council on Environmental Quality, 1997; New Jersey Department of Environmental Protection, 2009).

The California Environment Quality Act Guidelines for Cumulative and Indirect Impacts define three (3) types of impacts. Direct effects are the impacts caused by a project and which occur at the same place and time. Indirect effects are reasonably foreseeable impacts
caused by a project and which occur at a different time or place as they are brought about by direct physical change in the environment. These may include growth-inducing effects or other impacts that result from induced changes in patterns of population rate or land use, and effects on ecosystems or other natural systems, air and water (CEQA Guidelines for Cumulative and Indirect Impacts, 2005). CalEPA (2005) describes cumulative impact as exposures, public health or environmental effects from the combined emissions and discharges in a geographical area including environmental pollution from all sources.

Cumulative Effects Assessments (CEAs) assess effects over a larger area, during a longer time into the past and future, evaluate impacts on Valued Ecosystem Components (VECs), include other past, existing and future actions and analyse significance, other than just local, direct effects (New Jersey Department of Environmental Protection, 2009). Cumulative effects occur as interaction between projects or human activities, between projects and human activities and the environment, and between components of the environment. CEA focuses on such pathways between cause and effect. Additive effects refer to cases in which the magnitude of combined effects along a pathway are equal to the sum of individual effect. If the combination exceeds the sum total the result is referred to as synergistic effect. Cumulative effects occur due to physical-chemical transport, nibbling loss, spatial and temporal crowding, and growth-inducing potential (CEAA, 2012).
Multiple environmental stressors negatively affect public health especially in environmental justice communities where the population is vulnerable. Stressors are entities that directly harm human or other organisms or ecosystems or make the target more vulnerable to harm by other stressors. An environmental justice community refers to the right of protection from environmental hazards of all members of that community (Morello-Frosch, 2008). Environmental justice communities often complain about the lack of a more comprehensive approach to and of understanding of the multiple pollution burdens they face. Cumulative environmental pollution may lead to health, societal and economic consequences (NJDEP, Office of Science, Research and Technology, March 2003). Individual stressors and place-based stressors can increase individual susceptibility to environmental pollutants’ toxic effects (Bell et al., 2007).

CEA is effective when the more specific interactions among various actions are finely broken down and when synergistic effects especially the potential interactions among contaminant releases and direct physical effects and natural perturbations are considered. Attention should also be given to the influence of environmental cumulative effects on socio-economic systems. Incremental contribution of an action should be compared to regional thresholds for different VECs (CEAA, 2012).

According to Greig and Duinker (2011), there should be an interdependence between science inside EIA and science outside EIA and Seitz et al. (2011) point out that CEA practitioners often lack adequate experimental design when they assess CEA and that CEA often fails to develop knowledge and tools needed for predicting CE. Noble et al., (2011) also criticize the lack of scientifically-grounded thresholds for CE. A balance in the level of ambition in the CEA process is also frequently evident. On one hand too much emphasis on scoping in CEA may lead to too much attention on marginal issues at the expense of more important issues (Baxter et al., 2011) while on the other hand CEA scoping must cover all significant impacts (Weston, 2011). Terms of reference should coincide with theory and practice in CEA and should follow appropriately made guidelines.
2.7.1 Models for assessing Cumulative Impacts

There are several models for assessing cumulative impacts. The United States EPA Framework for Cumulative Risk Assessment identifies sources, stressors, pathways and receptors, and provides a flexible endpoints system to measure the effects of stressors (U.S. Environmental Protection Agency, 2003). The United States EPA office of Enforcement and Compliance Assurance makes use of the Environmental Justice Strategic Enforcement Assessment Tool to identify areas with high environmental and public health burdens. Environmental indicators, human health indicators, compliance health indicators and social demographics indicators are assessed to calculate a total score of points (New Jersey Department of Environmental Protection, 2009). Geographical Information Systems provide a very efficient tool for CEA (Gontier, 2007).

Faber and Krieg’s Model (2002) combined census data and environmental data, and then identified both income-based and racially based biases to the geographic distributions of seventeen types of environmentally hazardous sites. He and Krieg constructed a point system to rank cumulative exposures from multiple media and sources (Faber and Kreig, 2002). In this model, vulnerable and burdened communities are identified. Requirements for additional analysis and action in these hot spots are adopted. Projects for these hot spot areas should be scrutinised to see how the environmental quality will be effected by the project. Screening techniques should be adopted for short-term results and an EIA should be made for mid-term results. A review of cumulative environmental and health impacts and demographics is necessary for long-term results. Existing impacts in burdened or vulnerable neighbourhood and air pollution burdens will be reduced or eliminated. Data collection and development of technical tools are to be used to begin to assess and regulate impacts. Municipal officials should be educated and involved and cumulative impacts primer can guide discussions of policy initiatives. Residents should be empowered to become involved in the assessment of cumulative impacts and encouraged to use their knowledge and resources to define risk, collect data and propose solutions. State agencies should also participate actively (New Jersey Department of Environmental Protection, 2009).

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However, there might be disagreement on CE between an environmental study and the authority in charge of the assessment process (Franks et al., 2010). The CE often goes further than the area affected by a project and different aspects have to be analyzed on appropriate spatial scales (Noble, 2008). Temporal scale is important. It is difficult to distinguish CE from past, present and future activities. Another difficulty is the collaboration among various departments which can be addressed through a multi-stakeholder co-operation (Franks et al., 2010). Noble (2008) argues that linking successive assessments is important to keep addressing CE through the whole planning process.

Sharing information and co-ordinated activity are important for a meaningful CEA (Morrison-Saunders and Arts, 2003). Openness, creativity and information and collaboration help to achieve a quality CEA (Piano et al., 2001; Canter and Ross, 2010). Public participation is a key contributor to CEA (Noble, 2008). A CEA can be of quality if there is a high level of education and training (Bexter, 2001) so specialists integrate EIA and CEA and raise the CEA level.

**2.8 Public Participation and Decision Making**

A key function of EIA is to provide a forum for public participation. Traditionally EIA effectiveness was measured by its achievement of policy goals (Sadler, 1996). However recently it has been argued that a goal-directed orientation leads to one dimensional rationalism which in turn leads to narrowing views (Elling, 2009) instead of leading to plural interpretation of the objectives, design and use of assessment instruments (Cashmore et al., 2010).

The Rio Declaration called for broad participation in decision-making processes (Curwell and Cooper, 1998). Wende (2002) found that greater participation of public authorities, experts and third parties at the scoping stage led to more project modification in Germany. Participation is a necessary feature of all sustainable endeavours (Benson, 2003). EIA places its value system in the public domain (Bond, 2003).

“The Aarhus Convention stands on three “pillars”: access to information, public participation and access to justice, provided for under its articles 4 to 9. The three pillars depend on each other for full implementation of the Convention’s objectives” (United Nations - New York and Geneva, 2000, p.5).

Pillar 1 – “Access to environmental Information”
Pillar 2 – “Public Participation in decision-making”
Pillar 3 – “Access to Justice”

Figure 2.4 Aarhus Convention Summary Source: United Nations - New York and Geneva, 2000, p.5

EIA is a tool which promotes discussion and participation by a variety of actors giving the latter the opportunity to influence environmental planning and decision-making (Elling, 2004), and increases transparency and information for the public and decision makers (Wilkins, 2003). The interactive and communicative policy of EIA creates the chance for all actors and stakeholders to play a role in planning development projects which have important environmental impacts. Even those who are not experts can take an active part, thereby increasing the potential of deliberative democracy (Hokkanen, 2007).

Participation is recognised as a cornerstone of EA (Noble, 2005) as it strengthens the democratic fabric of society by giving the public the opportunity to participate directly (Petts, 2003). Since public participation broadens the range of potential solutions, it leads to more balanced decision-making and reduces the chances of litigation (Sinclair & Diduck, 2008). Through early involvement and inclusion, conflicts over values and aspirations are identified.
and more easily resolved. Communication, dialogue, diverse perspectives and mediation are stimulated by deliberative involvement, and meaningful participation is facilitated through non-formal education (Sinclair, A., et al., 2008).

Since public participation is complex and laden with values, and there are no agreed upon evaluation methods, Rowe and Frewer (2004) have proposed three necessities for public participation evaluation, namely (i) defining effectiveness, (ii) developing processes to measure effectiveness and (iii) conducting the evaluation and interpreting results. Four factors contribute to effective public participation, namely the nature of the public involved, the amount of power attributed to the public in the EIA process, when the public are involved and the ability to manage conflict (Nadeem, O., and Fischer, T. B., 2011). Indicators used to assess the effectiveness of public involvement in EIA are best chosen on the principles that they are directly observable phenomena that can be measured objectively. There is a close relationship between indicators and aims, and they are suited to the inductive/deductive approach (Del Furia, J. & Wallace-Jones, J., 2000). The goals of involving the public in EIA are those that are directly observable or are subjective and suited to an inductive approach. For example, understanding the perception of the proposed activity and improving overall decision-making can be dealt with inductively. Addressing non-organised individuals, organised groups and diverse interests are positive aspects to help analyse the nature of the public involved; on the other hand, favouring one segment of the public and assuming that the public seek information are aspects with negative repercussions (Del Furia, J. & Wallace-Jones, J., 2000).

Since spatial planning and environmental management are complex and multifaceted, the involvement of the public in decision-making is important (Tippett et al., 2005) and has become a legal requirement in many countries. However the question of whether public participation is as effective as thought is still to be answered (Desai, 2008). Conrad, E., Cassar, L., et al. (2011) have found out that the public participation will be truly effective if the public have found out that at present the public mindset in Malta is a constraint for effective and rewarding public participation. Time is needed for the public to improve its environmental knowledge to be able to give an effective contribution through its participation. The study also concluded that a transparent framework which specifies the reasons for and the ways in which public is to be involved.
Effectiveness can be evaluated through outcome goals like better accepted decisions, consensus and education, public values incorporation, trust fostering, conflict reduction and cost effective decisions (Chess and Purcell, 1999; Beierle, 1999). It can also be evaluated on processes like fairness, information exchange and group process and procedures. Rowe and Frewer (2000) have adopted both outcome and process goals, as does the International Association for public participation (2007).

There are those who focus on theory based evaluation and those who argue in favour of a review based evaluation. The former approach ensures structured results (Frewer & Rowe, 2005) while the latter ensures that participants describe what effectiveness means to them in a given context (McCool & Guthrie, 2001) and responds to context specific challenges (Dietz & Stern, 2008). Both approaches can be used to complement each other (Chase et al. 2004).

Many authors think that EIA does not achieve democratic goals although it performs well in involving stakeholders. Bell and Morse (2003) challenge the practicality of public involvement and Brookes and Miller (2003) question what level of participation is appropriate in each case. Sometimes the general public is more attracted by controversial projects. Tomlinson (2003) agrees with this. A public hearing can be a weak method of consultation in providing stakeholders with an influencing role in decision-making (Aschermenn, 2008) since it can turn out to be a complex, unpredictable and intimidating. A public hearing can be hijacked by a dominating group (Naim, 2004) and be dominated by lobbies, so giving little scope to the lay public (National Commission for Sustainable Development, 2004). EIA tends to be used by a new political elite focused by a few active citizens and not by the general public (Polonen, I., et al., 2011). Although a small group can still come up with innovative ideas and contribute to planning and decision-making.

An additional concern is that the public’s contribution in decision-making tends to be inconsistently used, due to the structure of decision-making processes which often do not fully consider social matters and development choices, particularly in strategic planning and in the decision-making phase. It often turns out that public comments are ignored due to the priorities of influential developers. When developers are uncollaborative, the EIA’s preventive and democratic aims will be difficult to achieve. Since EIA can be used to gather support for and against acceptance and legislation of a developmental site, it can create more distrust and disputes (Polonen, I., et al., 2011).
Public participation tends to be passive since it often takes place through open houses, public meetings, surveys and written comments which do not enhance interaction with target publics (Sinclair, A. J. et al., 2008). Lack of attention to non-formal education, training and skills development further blunt public participation’s effectiveness (Sinclair, A., et al., 2008). Diduck and Sinclair (2002) described barriers to effective participation as structural (many believe that their involvement is useless as decisions are foregone conclusions) and as many individuals do not know about the EA (Sinclair, A. J. et al., 2008). When the key components of meaningful public participation processes like integrity and accountability, openness to public influence, fair notice and enough time for preparation, proper venues for communicative dialogues and capacity building and interactive techniques are not given importance, the public participation process loses much of its effectiveness and becomes superficial and artificial (Sinclair, A. J. et al., 2008).

The information processing model is the most dominant theory on how EIA promotes environmental outcomes (Holder, 2004). This may be based on the assumption that there is a correct answer to resource allocation decisions and that EIA provides decision makers with information on impacts of projects. This overlooks the fact that the correct answer does not really exist as there are different perspectives based on different views and constructs. Besides the subjective way in which information is generated is ignored (Jay et al., 2007). This model may be based on a more socially aware information processing perspective, which involves the proponents and governments informing the community and receiving its feedback so decision makers may take an informed decision on the most favourable option. However, decisions about resource allocation are the result of the interaction of different factors, and information above seldom changes outcomes (Bartlett et al., 1999: McIntosh 2010a).

2.9 EIA and Decision Making

Deelstra et al. (2003) emphasize the need of integration of EIA into the decision-making process because decision makers are not receptive to the information provided by EIA research. A major flaw is that EU legislation does not legally constrain the granting of development consent to projects which are to have negative effects (Kramer, 2000: Polonen
Although EU legislation requires competent authorities to base their decision on information gained through EIA, assessment results are not necessarily given enough weight in the decision-making process (Polonen, I. et al., 2011). EU legislation lacks substantive (action forcing) elements but it may be argued that EIA is still effective as long as it prevents or mitigates predicted environmental harm. However the decision-making phase should transform the information gather by EIA into legally binding requirements to ensure the prevention of environmental harm.

The aim of EIA is to deepen the environmental impact assessment and take this assessment into account in planning and decision-making, and to further inform citizens and help them participate. Up to a certain extent, EIA’s requirement of comprehensive environmental studies and the introduction of a holistic approach into assessment practices have improved the assessment of large development projects’ environmental consequences (Polonen, I. et al., 2011). EIA has also increased the environmental information available to citizens thus enhancing citizens’ participation. However the questions of whether EIA effectively prevents significant harmful environmental consequence, and whether it provides comprehensive coverage of all projects likely to have significant adverse effects on the environment remain (Heina & Poder, 2010).

2.10 Follow-up

Follow-up is one of the priority areas of EIA (Sadler, 1996). The EIA process can be divided into pre-decision and post-decision stages (Arts et al., 2001). Follow-up, which includes post-decision monitoring and auditing, refers to the EIA post-decision activities as ex-post evaluation, post decision analysis and post decision management (Morrison-Saunders and Arts, 2004) to monitor, evaluate, manage and communicate the environmental outcomes that actually occur (Arts et al., 2001). It is concerned with the final design, construction, operation and decommissioning, and project and environmental management (Morrison-Saunders and Arts, 2004b). Many authors argue that lack of follow-up is a major constraint on EIA effectiveness (Dipper et al., 1998). For EIA to contribute towards sustainable development, the consequences of decisions must be investigated, communicated and acted upon. This can be ensured by post-monitoring and auditing (Arts and Nootebloom, 1999).
The International Association for Impact Assessment (IAIA) set out best practice principles to promote effective and consistent EIA. The IAIA (1999) recognised follow-up as an essential operating principle in order to ensure that the terms and conditions of approval are met, to monitor the impacts of the development, to monitor the effectiveness of mitigation measures, to strengthen future EIA applications and mitigation measures, and to undertake environmental audit and process evaluation to optimise environmental management.

Follow-up links the pre-decision and post-decision stages of EIA, as it sees that a project’s plan is implemented. It refers to the real effects on the environment. Follow-up helps reduce uncertainties systematically (Glasson, 1994). Not only does follow-up improve EIA effectiveness, but it also leads to sustainable development by controlling projects and their environmental impacts, monitoring decision-making flexibility, enhancing scientific and technical knowledge, improving public awareness and acceptance, and integrating with other information such as Environment Management Systems (Morrison-Saunders and Arts, 2004b).

It also assesses whether mitigation measures have been implemented and if they have been effective. Mitigation is an important part of EIA process as mitigation measures help avoid, minimise, rectify, reduce or eliminate and compensate for impact (CEQ, 1978). Without follow-up, mitigation measures are likely to be listed in the pre-decision EIA stages but once the development consent is granted, the EIA process comes to an end (Dipper et al., 1998, p.733) and little attention is given to what really happens.

Follow-up benefits the developer in various ways. It protects the developer from liability, helps him manage the project better, benefitting in terms of ‘image’ (Welford 1998), and facilitates community acceptance, and saves him the costs of mitigation schemes. Follow-up benefits decision-makers as well, as they are assured that the developer complies with any planning conditions and that any issues that come up are rectified, and it also provides important feedback for future decision. The environment benefits from follow-up, because actual impacts, besides predicted ones, are assessed. On the other hand, follow-up leads to increased costs for developers and an increased work load on decision makers and planning authorities. The EU Environmental Liability Directive (2004/35/CE)\(^9\) will increase operators’ environmental liability exposure and this will spur operators to pay attention to follow-up.

\(^9\) DIRECTIVE 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage
Barker and Wood (1999) and several other authors encourage the introduction of monitoring and auditing to improve EIA effectiveness. There is no doubt that follow-up determines the actual outcomes of the project and has the aim of preventing the development’s negative consequences. It controls by checking if EIA predictions are correct and if the project’s effects fall in line with the development consents’ limits, focusing on sufficient and cost-effective mitigation measures. Monitoring also deepens our understanding of the causal effects behind the project’s impacts and this in turn promotes more accurate prediction methods (Polonen, I., 2011). When stakeholders are presented with the opportunity to express their opinions on the monitoring of results, the democratic aspect of EIA is enhanced (Polonen, I., 2007).

Although this pressure led several jurisdictions to provide for some sort of post-decision analysis (Morrison-Saunders et al., 2003), employing follow-up in practice has proved difficult (Arts and Nootebloom, 1999) due to vague and imprecise terms, which make it difficult to evaluate and verify the accuracy of impact reductions (Noble and Storey, 2005). Arts and Nootebloom (1999) listed a number of other reasons, namely uncertainty and limited information, deficiencies in EISs such as vague and qualitative impact predictions and lack of rigour in describing projects, lack of guidance, legislation deficiencies, and demands on financial and staff resources. Another drawback is that developers are not easily persuaded to take up follow-up measures if these are non-mandatory (Glasson, 1994). On the other hand, although Directive 85/337/EEC does not make follow-up mandatory, many jurisdictions provide other ways for follow-up outside the EIA framework (Arts and Nootebloom, 1999).

However this lack of follow-up framework opens the way to piecemeal requirements which are obviously not effective enough (Frost, 1997). Although Hunsberger et al. (2005) believe that EIA quality is increased through increased citizen participation in follow-up activities, and O’Faircheallaigh and Corbett (2005) argue that effective environmental management can be only achieved with substantial input from civil society, follow-up for environmental management and meaningful community involvement in follow-up has not frequently occurred (Morrision-Saunders & Arts, 2005). Hunsberger et al. (2005) note that EIA has been weak in effective monitoring and community engagement.
2.11 Adaptive Management

Adaptive Management (AM) programmes as a follow-up are gaining in popularity and are being used in relation to natural resources management, project planning and resultant cumulative impacts and project operations and their effects. In the USA these are being increasingly used as a planning and operational tool when an EIA is needed.

As regards natural resources management, AM is a management practice system based on identified outcomes, monitoring to examine if management actions are meeting outcomes, and facilitating changes that ensure that outcomes are achieved. AM takes into consideration that knowledge about natural resource systems is questionable (US Department of the Interior, 2004).

As far as water resources projects are concerned AM address outcomes through flexible decision-making which allows adjustment based on better understanding of outcomes. AM emphases learning while doing and is rather a complementary means to more effective decisions that help meet social, economic and environmental goals (National Research Council, 2004).

AM is a science and performance based approach to ecosystem management where there is uncertainty in predicted outcomes. Proposed actions are anticipated by management so monitoring, integrative assessment and synthesis will show the effective actions to be taken. Better understanding of ecosystems’ interactions is gained through new information and uncertainty is minimised.

AM can be ‘active’ or passive’. Active AM refers to the planning of multiple actions, setting up of experimental objectives, monitoring and adjustment of management decisions. This fits natural resources management. Passive AM refers to the selection of a single course of action.

Given the fact that there is no comprehensive scientific knowledge about environmental resources, sustainability and their cumulative impacts (Canter, 1996), AM can reduce many uncertainties and thus reinforce knowledge base. AM can be used to address cumulative effects of projects effecting ecologically diverse areas. It also provides for periodic reviews of decisions taken. Ecosystems exposed to multiple stressors from past, present and future
actions also benefit from AM. AM means the addition of ‘adapt’ to the traditional process and accounts for unpredicted or inaccurately predicted environmental changes.

Elements of AM are management objectives which are regularly revisited and revised, management of the model of the system, and a range of management choices, monitoring and evaluation of outcomes, incorporation of learning into future decisions, a collaborative structure for stakeholder participation and learning, assemblage of information of key indicators, adequate budgetary and personal resources and follow-up activities in alignment with EIA (Canter, L., and Atkinson S. F., 2010).
Chapter 3

METHODOLOGY
Chapter 3

Methodology

3.1 Introduction

This study has the aim of evaluating the effectiveness of the EIA process in Malta. In order to reach this aim, the study seeks to develop an understanding and identification of factors which may have an influence on the effectiveness of EIA, focusing on (i) procedural issues, (ii) the influence of the EIA process on planning decisions, and (iii) its contribution to modifying project design/implementation through designation and implementation of mitigation measures which minimise environmental, social, economic, cultural, and health impacts of a negative nature. To this end, this chapter delineates methods used to reach the objectives identified in the first chapter.

The basic steps (refer to Table 3.1) which must be followed in carrying out a study of a phenomenon are as follows:

1. **Problem formulation** by identifying the context of the study

   The context of this study includes:

   i. The main aim and objectives of the analysis;
   ii. Assumptions of the study;
   iii. Relevant previous studies;
   iv. Appropriate stakeholders of the study.

2. **Research Design** to determine the proper methods and procedures for gathering information, analysing it and finally reaching a conclusion.

   The researcher decided to conduct the research study by carrying out the following separate stages:

   i. Desk Study - a thorough initial search;
   ii. Qualitative survey research – semi structured interviews.

<table>
<thead>
<tr>
<th>Table 3.1 Basic steps carried out in the study</th>
<th>Source: Modified from (NATO, n.d.)</th>
</tr>
</thead>
</table>
3.2 Establishing the Scope of the Problem

Defining the concept of EIA effectiveness is elusive, as the term ‘effectiveness’ is open to various interpretations and has a vast potential array of meanings. This study attempts to distinguish between the theoretical underpinnings of the EIA process and the way EIA is conducted in practice, in order to draw insights in this regard. Once this holistic view has been established, this study then delves deeper into specific EIA components to measure the extent to which theory has been actually put into practice. Furthermore, the subject was considered at two (2) scales – (i) the national scale, looking at the functioning of the national EIA process in general terms, and (ii) the scale of site-specific projects, focusing on a selection of case studies relating to the island of Gozo.

The initial stage involved obtaining background information relating to several issues concerning the basic components of the EIA process. To focus the process, the author identified six (6) measures for evaluation, as follows:

- The influence of EIA on project design;
- The consideration given to public response throughout the EIA process;
- The extent to which, and manner in which, mitigating measures are addressed, including and covering social, environmental, economic and cultural aspects;
- How constructional and post-constructional monitoring is considered;
- If environmental outcomes that actually occur are monitored, managed and communicated and followed up (if at all);
- Whether the process contributes effectively to the achievement of sustainability goals.

These ‘criteria’ are not intended to be quantitatively assessed or exhaustively evaluated, but rather to provide a general framework for a qualitative evaluation of EIA effectiveness, within the limits of data and time availability constraining this study.
3.3 **Research Design and Data Collection**

To carry out this evaluation, a two-pronged approach was adopted, namely (i) a desk study consisting of a review of relevant documentation, and (ii) semi-structured interviews with key stakeholders involved in the EIA process. The desk study approach will firstly assess the manner in which EIA process is implemented in Malta, and will address challenging aspects identified from the literature.

3.3.1 **Desk Study Approach**

3.3.1.1 **Literature Review**

First, the general literature review was intended to provide background as to common shortcomings in the EIA process, and identify issues which merited further exploration in the local context. In this regard, a variety of sources were consulted, including empirical research studies published in academic papers, reviews or practices, institutional guidance documents, online sources, relevant EU Directives and local studies (Gozo and Comino Local Plan and Malta Environment and Planning Authority reform documents). This wide and in-depth reading helped to provide a background to several issues pertinent to the Environmental Impact Assessment process.

3.3.1.2 **Site-Specific Projects**

Second, the study included the assessment of site-specific projects documentation (see Appendix 1), which is made available to the public through the library of the Malta Environment and Planning Authority and the latter’s website. As can be illustrated in the below table (refer to Table 3.2) and figure (refer to Figure 3.1), there were a total of forty-seven (47) planning applications in Gozo, which were deemed to require an EIA study. The outcome of some of these is still pending, others were granted planning permission, whilst others were refused, withdrawn or exempted (refer to Table 3.3 & Figure 3.2).
Table 3.2 Total no. of different types of EIA study documents reviewed

<table>
<thead>
<tr>
<th>Types of EIA study documents reviewed (in accordance with EIA Regulations)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Planning Statement (EPS)</td>
<td>33</td>
</tr>
<tr>
<td>Environmental Impact Statement (EIS)</td>
<td>10</td>
</tr>
<tr>
<td>N/A*</td>
<td>4</td>
</tr>
</tbody>
</table>

Figure 3.1 Total no. of different types of EIA study documents reviewed
### Planning Applications’ Decision Status

<table>
<thead>
<tr>
<th>Decision Status</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td>26</td>
</tr>
<tr>
<td>Approved</td>
<td>13</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>4</td>
</tr>
<tr>
<td>Refused</td>
<td>1</td>
</tr>
<tr>
<td>N/A*</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3.3 Decision status of Planning Applications

---

![Decision Status](image)

**Figure 3.2 Decision status of Planning Applications**
The list of EIA study documentation applications in Gozo was requested from MEPA through e-mail. MEPA provided fourteen (14) EIA applications with case numbers; locations and a brief description (see Appendix 2). The EIA study documents were reviewed in order to gain a general overview of the ways in which the key issues highlighted above were addressed. After browsing the Authority’s website, the author found that there were more EIA applications and more information pegged to them. Every EIA application number was found individually under the name of the particular village (by Local Council search) the site to be developed was located in. These publically available EIA applications were found in the ‘Search’ and ‘View EIA Application Detail’ on the MEPA website (http://www.mepa.org.mt/permitting-ea-search) under the section ‘Environmental Assessment Search’. The author went through the available information and took note of the information that was relevant to the present study (see Appendix 1). Subsequently the EIA applications were placed into eight (8) categories which were further broken down into twenty (21) sub-categories (refer to Table 3.4).

Most of the EIA categories fell in the category ‘Extraction’ and category ‘Coastal’. The author took note of the reception date, the final decision date, the recommended decisions by the case officers and the final decision of the EIA processes. Some EIA details had reports like EPD reports, Addendum reports, Non Technical Summary, Terms of Reference, and Public Hearing Comments with detailed information about the process attached to them. As regards to EIA study reports which lacked such ancillary information, further details were requested from MEPA. Information was presented in tables, graphs, analysed, and interpreted. The information was reflected in the questions compiled for the interviews.
<table>
<thead>
<tr>
<th>Main Category</th>
<th>Sub-Category</th>
<th>No. of EIA Applications</th>
<th>Total/Main Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>Farms</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Engineering Works</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fish Farms</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ports &amp; Harbours &amp; Yacht Marinas</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sinking of Vessels &amp; Construction of Artificial Reefs</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beach Replenishment</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Coastal</td>
<td>Fish Farms</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Engineering Works</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sinking of Vessels &amp; Construction of Artificial Reefs</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beach Replenishment</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>Storage of Gases, Fossil Fuels &amp; Petroleum</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Extraction</td>
<td>Mineral Processing Industries</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soft-stone Quarries</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Hard-stone Quarries</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Petroleum and Natural Gas</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>Industrial Estate</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Industries exceeding Site Area of more than 2000m²</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Airports</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Dams &amp; Reservoirs</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roads &amp; Tunnels</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other: Developments affecting Natural &amp; Cultural Heritage</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tourism</td>
<td>Hotel &amp; Tourist Accommodations</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Waste</td>
<td>Waste Handling &amp; Processing Disposal Installations</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Waste Sewage Treatment Plants</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Landfills</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.4 Categories table
3.3.2 Semi structured Interviews

Interviews focused on gaining general insights, from those involved in the process, into how well the EIA process works overall and into any areas where shortcomings may exist. It was assumed that those participating did so in good faith, and had no hidden agendas or vested interests when highlighting aspects of the EIA process that they felt needed to be improved.

The interviews undertaken in this study were semi-structured in nature, in order to ensure that the principal thematic issues of the research topic were covered, and at the same time allowing flexibility to adjust the direction of the interview as necessary. The question guide used for these interviews is attached in Appendix 3 (A-B), and was broadly based on Brymann (2001)’s outline of the typical form of an interview, namely ‘the warm up’ or introductory part, the ‘grand tour’ or core part with asking questions and recording answers, the ‘cool down’ part where interviewees can add further information and the closure.

Interviews lasted between forty five minutes and two and a half hours. In some cases, the interview guide (see Appendix 3) was made available to the respondent before the interview, when this was specifically requested. The interviews added depth to the study as they yielded opinions, interpretations and recommendations of experts, and the information gleaned from these interviews was then analysed. Open-ended questions allowed interviewees to construct their own answers and provide more valid and varied details. Most of the interviewees expanded on the questions asked, and also clarified answers when asked to do so. The interview guide (see Appendix 3A) was based on eighteen (18) open-ended questions focusing on the following aspects. The questions probed issues of practice, predicted impacts, case officers’ recommendations at board levels, monitoring during constructional and operational phases of the projects and follow-up, among others.

The qualitative interview is a form of social interaction in which knowledge evolves through determined dialogue, which aims to collect rich and detailed data (Kvale, 1996). Interviews can be structured, unstructured or semi-structured (Brymann, 2010). Whereas structured interviews have predetermined questions with fixed wording to ensure interviewees’ responses can be aggregated (Robson, 2002), the semi-structured interview allows interviewers to vary the sequence of questions and to ask additional questions to lead to significant issues (David and Sutton, 2004). The interviewer lets the interview develop spontaneously, referring to a list of topics of interest in an unstructured interview (Robson,
The scope of the semi-structured interviews was to discover respondents’ perceptions of the topic under discussion.

### 3.3.2.1 Stakeholders Interviewed

Interviews were made use of to gain ground knowledge from those who practised the system or could provide information. It could lead one interviewer to other interviewees. Eighteen (18) potential respondents were approached and provided with a covering letter *(see Appendix 4)* detailing the scope of the work. Of these, ten (10) agreed to be interviewed, as follows:

- **Group 1**: Two (2) private sector professional consultants who work as coordinators/consultants within the process who gather data and compile EIA reports based on Terms of Reference.
- **Group 2**: Two (2) academics who also are considered as professional planners. These interviewees have systematic knowledge of the EIA system but are more inclined to the planning side.
- **Group 3**: Two (2) public sector professionals who work as policy makers employed at MEPA who are responsible for overseeing the EIA process and for reviewing submitted EIA documentation;
- **Group 4**: Two (2) public sector employees who are not directly involved in the EIA process but who may be consulted as relevant institutional stakeholders due to their EIA system background knowledge;
- **Group 5**: Two (2) members of Environmental non-governmental organizations.

**Group 1 and 2:**
Both these groups were chosen for interviewing because they are constantly improving their knowledge to be more persuasive, and effective in their profession. Therefore their opinion would be immensely useful for this study.

**Group 3:**
MEPA consultants/officials were chosen for interviewing because of their long and direct experience as they see how the system is being practised day in and day out. They have first hand information because of their direct involvement and can see the whole picture. This is a decided advantage on companies as the latter can only see the part that interests them or that is applicable, as far as the MEPA proceedings are concerned. MEPA officials glean experience and knowledge through contact with various clients and their knowledge, needs
and problems, and delve deeply into each case to gain a better understanding. However, some MEPA officials were reluctant to open up on some issues to safeguard their and MEPA’s interests.

**Group 4:**

Another group of interviewees was made up of public sector employees who have a body of knowledge on the site-specific projects. The employee’s experience and boldness in speaking and airing flaws and strengths of the system would be useful and also counter the reluctance of the inside MEPA consultants. They would help in creating more authentic general view.

**Group 5:**

The NGOs were interviewed because of their direct environmental interest and their experience and outspokenness. They would criticise the system much more freely than MEPA consultants and would expose flaws and pinpoint what needs to be reformed in a freer way and justify their arguments. However attention would need to be given to any biases, and to any ‘extreme’ criticism that might crop up and that might be rooted in the NGOs’ own agenda.

### 3.4 Limitations

The researcher feels that the study may have been somewhat restricted due to the limitations encountered in the course of the research. The primary setback was the reviewing of EIA reports at the MEPA library which took a long time, mostly because documentation had to be reviewed on site (it is not loaned out) and because the opening hours of the library were very limited (one morning per week). Unfortunately, the required material could not be accessed through any other means. EIA quality (in terms of consistency and volume) varied from one report to another and they were compiled in different formats (especially those conducted before 2000).

Another drawback which led to a forced change in the nature of this study was the unavailability of data about follow-up. Despite the considerable efforts made by the author,
the information about follow-up was not made available. The information was of substantial importance to the researcher as this would have, no doubt, enriched the study.

Moreover, lack of or inaccessibility of previous studies in EIA in Malta has rendered the author’s study more challenging and difficult. Information was scarce or difficult to obtain. This was very time consuming. There were also issues with inconsistencies in data made available by MEPA, including inconsistencies between the two types of EIA searches presented online.

Another problem was the failure of a number of case officers and environmental officers to concede to the request to be interviewed, as well as the slow rate of response of others who did eventually agree to be interviewed. This made evaluation more difficult. Some persons that declined to be interviewed eventually provided suggestions as to others, who might be willing to participate, but such referrals took time; several of these also turned out to be non-productive. Some respondents also had difficulty recalling case-specific information, when projects would have been reviewed some years before. Furthermore Group 4 (public sector employees) failed to give adequate feedback on specific information. They only provided very general comments which did not help this study.

Other limitations which may have somewhat restricted the study were the variety of technical names referring to the same issue which caused a lot of misunderstandings. An additional drawback was that the table of EIA reports obtained was found to have several EIA reports missing. A table of EIA reports was obtained and other details of PA cases were reached. Permission for reviewing was requested (see Appendix 5) from EIA teams through an electronic mail. The three major projects needed a special request to be reviewed.

Due to all of the above limitations, it would have been better for the author if a pilot study was made use of. Nevertheless, in spite of these limitations, the data gathered was significantly important and gave an added insight to the dissertation.
Chapter 4

DATA ANALYSIS
Chapter 4

Data Analysis

4.1 Introduction

This section presents an analysis of the way EIA is being implemented in Malta to establish if there is a gap between the theoretical soundness of EIA as reflected in the relevant legislation, on one hand, and the actual implementation of EIA, so as to evaluate the effectiveness of EIA in real terms. This analysis is carried out in the light of the literature review presented earlier in this study and on the basis of a review of site specific projects, with the discussion based also on semi-structured interviews conducted as part of this research.

4.2 Semi-structured Interviews

The semi-structured interviews approach was adopted in order to obtain insights for those with practical experience of the EIA process, and those who thus could provide highly relevant information about different factors of the EIA process.

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Stakeholders Interviewed</th>
<th>No. of respondents per group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Public sector professionals – employed at MEPA</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4.1 - Number of stakeholders interviewed per group
4.2.1 Predicted Impacts

4.2.1.1 Specific types of Impacts

<table>
<thead>
<tr>
<th>Question</th>
<th>Does the EIA team give priority or disproportionate importance to a specific type of impact and/or environmental/socio-economic component?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No.</td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
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<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
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<td>3.</td>
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<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
</tr>
</tbody>
</table>

Table 4.2 - Interviewees comments on specific types of impacts

Bio-physical, social, aesthetic, cultural and economic impacts should be equally important within the Environmental Impact Assessment process. In order to test this statement, the author asked the interviewees whether the process in Malta gives priority to a specific type of impact and/or environmental, socio-economic component, or whether it gives disproportionate importance to particular types of impacts.

The Malta Environmental and Planning Authority officers spoke about the disproportionate importance being given to impacts and/or environmental components. One said that consideration of impacts depends on the expertise of MEPA officers but there are no economic experts among the officers, and this aspect is therefore not given due importance. The other respondent stated that EIA is based on the insights of several experts but agreed that social and economic expertise is weak. One of the officers also pointed to the importance of free standing studies on specific types of impacts related to a project and of feasibility studies carried out before project is started to see if the project is worth pursuing.

A non-governmental member was of the opinion that EIA gives priority to a specific type of impact, namely air pollution. The same respondent argued that social impacts are not considered and traffic management studies were left out in a number of EIAs. The other NGO interviewee was sceptical. The latter’s explanation was that MEPA concludes that the
proposal is unlikely to have significant environmental impacts with the consequence that the proposal does not require the preparation of an Environmental Impact Assessment (EIA).

‘EIA team seek to justify the proposal with the minimum of changes due to the fact that they (the environmental impacts listed in the Project Description Statement (PDS) presented as part of the application) are selected by the developers’.

(Respondent: Group5-NGO)

One of the academics argued that EIA team and consultants ‘are pressured’ and give in, by considering a type of impact or component and ignoring others which may more significantly impede a project’s progress. The other respondent of the academics and a private sector professional consultant also believe that EIA gives disproportionate importance to specific impacts and/or environmental or socio-economic components. The former said that the environmental and social component least considered by MEPA is the aesthetic aspect, because MEPA architectural experts do not participate in the EIA process. The former also emphasised the importance of design. The latter pointed to the difficulty found in balancing economic, social and political issues.

‘An Environmental Planning Director is particularly responsible for the environment but not for socio-economic development.’

(Respondent: Group1-Professional Consultant)

4.2.1.2 Comments on specific types of impacts

EIA process in Malta tends to find difficulty in striking a balance between economic, architectural, social, political, aesthetic, health, cultural and environmental issues. Instead of integrating these components in a comprehensive way, EIA tends to give priority or disproportionate importance to specific types of impact and/or environmental-economic components. This failure undermines the EIA’s potential for sustainable development.

However, as of late, according to a MEPA Senior Environment Protection Officer in one of the Authority’s 2010 newsletter claimed that the human health and safety component is

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10 MEPA Newsletter: Outlook 6 - EIAs: Human Health Impacts.
being dealt with and Human Health Impacts (HHI) in EIA will be collated under one chapter. Significant health-related impacts that may be created by development will therefore be tackled more effectively, incorporating all relevant environmental impacts (like noise and quality impairment of air, water and soil). Therefore greater importance will be given to health related issues in EIA and a developmental project may have to be downsized, relocated or not carried out it causes unacceptable health effects. This recent move is a step in the right direction.

The focus thus appears to be on predicted impacts on the bio-physical, and much less attention is being given to economic, social and political issues. However, the author does not think that this lessens the effectiveness of EIA in every case, because in a number of cases an individual feasibility study would have thrown light on the future of these particular projects. This corresponds to the provision for a description of financial feasibility study of the project and consideration of alternative sites. A balanced assessment of considerations related to socio-economic, ecological, and health aspects is, however, needed in EIA through a more equilibrated focus on these components. This is very important for the Maltese islands for baseline studies to be included in the environmental scoping statement as these would create a holistic picture of particular areas in Malta and Gozo. These surveys will also serve to reduce costs for future projects because the information gathered can be applied for other development projects.

**4.2.1.3 Cumulative, Indirect and Synergistic Impacts**

<table>
<thead>
<tr>
<th>Question:</th>
<th>How effective and/or comprehensive is the EIA process in assessing and addressing cumulative, indirect and synergistic impacts?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No.</td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
</tr>
<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
</tr>
<tr>
<td>3.</td>
<td>Public sector professionals – employed at MEPA</td>
</tr>
<tr>
<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
</tr>
</tbody>
</table>

Table 4.3 - Interviewees comments on cumulative, indirect and synergistic impacts
As can be seen from the above table illustrated in table 4.2, the overall agreement on the effectiveness of cumulative, indirect and synergistic impacts, shows a high rate of agreement that the assessment of the named impacts is ineffective.

Both NGO interviewees declared out rightly that the EIA process was ineffective as regards cumulative, indirect and synergistic impacts. One NGO interviewee said, ‘No, not at all. In cumulative this is completely overlooked’, the respondent went on to note that the NGO’s repeated appeals to MEPA in this regard fell on deaf ears and that projects go ahead in order to benefit developers, in spite of negative cumulative impacts and social impacts,. This interviewee did not draw any distinction between cumulative, indirect and synergistic impacts referring to all these types as cumulative.

The other NGO member also said that the cumulative issues should be dealt with by Strategic Environmental Assessment (SEA) rather than EIA. Consequently, according to this interviewee, the issues of cumulative impacts have been completely ignored in the compilation of local plans.

The other NGO interviewee said that, ‘it is worrying because reports tend to be generally biased’ and deliberately discard cumulative impacts. Again, no distinction was made between the three different types of impacts asked about. The respondent placed the blame squarely on the MEPA EIA team.

MEPA officers said that there were shortcomings in assessing and addressing cumulative impacts in technical terms. They said that this is a tricky area even in other countries. They also referred to cases in which the threshold has been exceeded and this influences negatively future projects. Also it was pointed out that paying too much attention to small details means that we can go from one extreme to another. Therefore, MEPA resorts to taking every project on its own merit. In other cases, there are obvious cumulative impacts but MEPA can do nothing about them because the action has to be taken with other governmental departments, i.e. there is a lack of a holistic approach. One of the officers went on to explain that determining cumulative impacts is difficult because one does not know which projects will be undertaken in the future and what their impacts would be. The same MEPA officer referred to indirect impacts, which he said are less difficult to identify than cumulative effects. Indirect effects can be identified qualitatively and can be addressed effectively through mitigation measures. In fact, according to this interviewee there are more robust safeguards in place against indirect impacts. The same respondent also referred to synergistic impacts as a
combination of indirect and cumulative impacts. Further to these comments the MEPA officer concluded that the aspect related to assessment of cumulative impacts is unworkable and logistically impossible, and recommended an alternative which is within acceptable limits and which a fluid mechanism that is modified from time to time to address cumulative impacts directly.

All of the respondents who felt the assessment of cumulative, indirect and synergistic impacts was ‘ineffective’ also emphasised the impossibility of carrying out a comprehensive analysis of a second or third project due to expensive constraints, the demarcation problem and due to the fact that one would not have a clear idea of other projects yet to come. It is difficult to identify which impacts will be present, for how long, and how they are to be considered in the light of future projects and their impacts. Therefore, there is a chasm between what is theoretically planned with respect to cumulative assessment, and the practicality of the theoretical requirement.

Cumulative environmental pollution may also lead to societal and economic consequences (NJOEP, 2003). NGO interviewees point out that not enough attention is being given to the influence of environmental cumulative effects on socio-economic systems. Again, as seen from the above section, there seems to be little balance between economy, ecology and social aspects to achieve sustainable outcomes (Bond, AJ. et al., 2010). Therefore EIA in Malta is still not integrating economic, environmental, social and institutional issues and this remains a major challenge to be taken up.

4.2.1.2.1 Comments on Cumulative, Indirect and Synergistic Impacts

EIA process is not assessing and addressing cumulative, indirect and synergistic impacts effectively. This is because stakeholders interests are given priority over cumulative impacts, there is not a holistic approach in addressing these impacts among the various governmental departments involved, cumulative impacts are not dealt with directly and are often ignored, and difficulty of carrying out comprehensive studies of a second and third project due to the demarcation problem, expensive constraints and lack of knowledge about which projects may crop up. Lack of integrative approach may lead to cumulative environmental pollution and dire societal and economic results.
Most of the new EU Member States have found difficulties in dealing with cumulative effects. Member States agreed that more guidance is needed despite the formal guidance document issued by the EU Commission, and called for exchange of experiences on how to address Cumulative Effects (European Commission, 2009). In the case of Malta, such new guidance and sharing of experiences is very important because due to its small area, cumulative effects will be more ruinous. Ideally, MEPA should give clear cut and straightforward guidelines and demarcations so that time consuming processes are avoided. Cumulative reports should be considered in the light of the whole decision making process, from submission stage to decision making stage, in Outside Development Zones (ODZ). Without such assessment, the countryside will become dotted with buildings. However, a holistic picture is needed because if EIAs of several projects are considered on an individual basis only, then the consideration of cumulative impacts will be rendered insignificant.

### 4.2.2 Monitoring

#### 4.2.2.1 Monitoring Implementation

<table>
<thead>
<tr>
<th>Question:</th>
<th>To what extent is monitoring implemented throughout the project’s lifetime?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No.</td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
</tr>
<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
</tr>
<tr>
<td>3.</td>
<td>Public sector professionals – employed at MEPA</td>
</tr>
<tr>
<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
</tr>
</tbody>
</table>

Table 4.4 - Monitoring Implementation

Interviewees were asked if monitoring is implemented throughout the project’s lifetime. The above table, Table 4.4 shows that while three respondents feel that monitoring
implementation is low, only one respondent feels that monitoring is highly implemented. The other respondents had no views on the above question.

One of the MEPA officers said that this is a weak point and a major issue from the point of view of the Environment Directorate. The implementation of monitoring throughout the project’s life time is problematic from the environmental aspect especially in the case of public projects and infrastructural projects. The respondent continued by saying that,

‘Although improvement has been achieved … there is still a long way to go. The terms in the building permit cannot be ignored. Safeguards seem to be only on paper.’

(Respondent: Group3-MEPA officer)

Additionally, the second MEPA officer alleged that during the construction, ‘the project has to be monitored under MEPA’s methodology.’ The respondent also mentioned that construction report goes to the enforcement officer. However, this interviewee elaborated on what the other MEPA officer has said by saying that, monitoring is a more difficult process during the operational stage because one has to establish first for how long monitoring has to be implemented. The same respondent agreed on the fact that there were cases where monitoring was stopped half way through.

One of the academics made reference to a case where a major project in which a member of the public carried out, on his own accord, the monitoring and reported results to MEPA.

‘This initiative was a success because MEPA took action but this obviously delayed the project’s time frame.’

(Respondent: Group2-Academic)

In contrast, one of the professional consultants believes that monitoring is becoming more and more important and is basically a requirement imposed on the developer. A lot of restraints, like the imposition of bank guarantees, are serving to ensure that the implementation of monitoring is becoming more effective. The other professional consultant said that monitoring is done only in some major projects as there is no standard condition
applied. The interviewee also recommended having a monitoring process not only for individual projects.

### 4.2.2.1 Comments on monitoring implementation

As we have seen above the interviewees were sceptical about the extent of monitoring implemented throughout the lifetime of projects. This is of great concern because failure to monitor projects may effectively undermine all the work conducted in the EIA and seriously limit EIA effectiveness. Furthermore this also means that there are limited possibilities of assessing the accuracy of impact prediction, and thus little constructive input for future assessments.

### 4.2.2.2 Monitoring data availability to the public

<table>
<thead>
<tr>
<th>Question</th>
<th>Is the data from monitoring made publicly available?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No.</td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1. Private sector professional consultants</td>
<td>Not all data</td>
</tr>
<tr>
<td>2. Academics (considered as professional planners)</td>
<td>Neutral</td>
</tr>
<tr>
<td>3. Public sector professionals – employed at MEPA</td>
<td>Not all data</td>
</tr>
<tr>
<td>4. Public sector employees (indirectly involved in the EIA process)</td>
<td>N/A</td>
</tr>
<tr>
<td>5. Members of environmental non-governmental organization (NGO)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 4.5 - Monitoring Data Available to the Public

As regards the public availability of monitoring data, a MEPA officer said that although such availability is required by the Aarhus Convention and such data is available on request, there
is much room for improvement, mainly in terms of making data access more available and user-friendly. According to the respondent, efforts are being made to achieve this objective.

‘EIAs are available on the website. Although there is a data overload, the system is accessible enough.’

(Respondent: Group 3 - MEPA officer)

Conversely, the other MEPA officer explained that monitoring data is available only in cases that need operation permit, meaning when the permit needs proceeding according to EIA Regulations. While one MEPA officer said that data from monitoring is made publicly available only in cases that need an operational permit, the other interviewees said that such data is not actually available.

It seems that the accessibility of such data is difficult and that the publication system is not user-friendly.

(Respondent: Group 2 – Academic)

An academic only made one comment by saying that monitoring data is supposed to be made available. The professional private consultants both agreed that not all data is available but should be. One of them even pointed out that for certain projects, putting data online should be a prerequisite.

4.2.2.2.1 Comments on monitoring availability to the public

This goes against (Subsidiary Legislation 356.09 (2)\textsuperscript{11} that provides for the consultants to identify which records the applicant shall keep for the purpose of monitoring the environmental impacts of development. Such records are ineffective if not published.

\textsuperscript{11} Subsidiary Legislation 356.09 – Environmental Impact Assessment Regulations
### 4.2.2.3 Modification of the project in response to monitoring data

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Stakeholders Interviewed</th>
<th>Respondent 1</th>
<th>Respondent 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>3.</td>
<td>Public sector professionals – employed at MEPA</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Table 4.6 - Modification of the project in response to monitoring data**

One of the private professional consultants said that the actual management of a project is modified in response to monitoring data, like noise, but the design is not. The other respondent of the same group also said that in the case of large projects the developer is bound by conditions imposed in the contract to modify when necessary and it is effective. One of the academic respondents also agreed that such modification takes place and pointed out that there are cases where such modifications have been carried out and management approaches have been modified.

Both the MEPA officers said that the actual management of a project is definitely modified in response to monitoring data when a problem is identified. This mostly happens when archaeological remains are found. In such case, the construction is stopped. This modification is a standard condition in every construction permit.

The fact that interviewees agreed that the implementation/management of the project is modified in response to monitoring data shows that monitoring data is often influential and leads to correction and positive results, notwithstanding the limitations with respect to access and public availability outlined above.
4.2.2.4  Behaviour of Developers and Contractors

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Stakeholders Interviewed</th>
<th>Respondent 1</th>
<th>Respondent 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>3.</td>
<td>Public sector professionals – employed at MEPA</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 4.7 - Behaviour of developers and contractors

When asked if monitoring during construction is changing the environmental behaviour of developers and contractors, the majority of the respondents were negative. MEPA officers and one of the professional consultants are of the opinion that this is starting to change and is optimistic that the present rate of change will greatly improve this aspect in the near future. The other professional consultant believes that monitoring is changing the environmental behaviour of developers and contractors because regulations force such change. When discipline comes into play, developers would start looking at ISO1400 which is not always easy to implement for developers.

Conversely one of the academics is still sceptical saying that it depends on the commitments and initiatives of the contractors and developers. The respondent also pointed out that governmental projects, like Bieb il-Belt and Smart City major projects were ‘examples of innovative systems.’ This shows that according to the respondents, who replied to the questions asked, developers are gradually becoming more professional and responsible.
4.2.2.5 Publication of Monitoring Reports vis-à-vis Behaviour of Developers and Contractors

The professional consultants had no doubt that publication of monitoring reports by the environmental agency will be very effective in changing developers’ behaviour. If such reports are placed online, and make public damaging actions taken by the developers, the pressure on developers will quickly mount; therefore, they will understand that they need to change their actions from the start in order to avoid such an eventuality. In addition, one of the other professional consultants also believes in the effectiveness of publishing these reports online because of public relations, because ‘nobody wants to have a bad reputation that the company is polluting the environment.’ The academic respondents also felt that the publication of monitoring reports will alter the behaviour of developers in the long run. However, they also pointed out that such reports would lead to rise in construction cost, as the developers would have to pay for them. While the other respondents had no comments on the question, the MEPA officers reiterated the same things as others have said.

The interviewees’ answers imply that monitoring does not help much in changing developers’ and contractors’ behaviour. Such a change in behaviour would mostly follow as a result if change of mentality brought about by education. Publishing of monitoring reports would increase both the developers’/contractors’ and public’s awareness, and increases overall trust.
in the EIA system. Greater public awareness will automatically influence directly the
developers and contractors respectively because the latter would understand that their
reputation would be in jeopardy.

### 4.2.2.6 Effectiveness of Monitoring Process

<table>
<thead>
<tr>
<th>Question</th>
<th>Is the overseeing of monitoring process and the analysing of the data obtained carried out in an effective way?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No.</td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1. Private sector professional consultants</td>
<td>Ineffective</td>
</tr>
<tr>
<td>2. Academics (considered as professional planners)</td>
<td>Ineffective</td>
</tr>
<tr>
<td>3. Public sector professionals – employed at MEPA</td>
<td>Ineffective</td>
</tr>
<tr>
<td>4. Public sector employees (indirectly involved in the EIA process)</td>
<td>N/A</td>
</tr>
<tr>
<td>5. Members of environmental non-governmental organization (NGO)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Table 4.9 - Effectiveness of monitoring process*

The majority of respondents agreed that the overseeing and analysing of monitoring data is
effective. The following are the comments provided by the respondents which reiterated
more or less the same thing. The respondents agreed that the procedure is ineffective because
as one of the respondents representing the NGOs (Group No. 5) has said ‘there is obviously a
relationship with the client.’ Also another interviewee from the private sector professional
consultants (Group No. 1) puts the blame on MEPA by saying that the planning authority
does not have the necessary expertise and/or knowledge on a specific subject. ‘At times the
university is involved in actual monitoring.’
One of the academics explained that ‘the fact that consultants are chosen and paid by developers does not augur well because this tripartite agreement between MEPA, developer and consultant may ensure expertise but does not ensure independence and fairness because the relationship developed between developer and consultant certainly does not guarantee impartiality and objectiveness.’

4.2.2.6.1 Comments on the effectiveness of Monitoring Process (in general)

This section on monitoring is a bit confusing for the fact that the majority of the respondents had given positive feedback on the first set of questions, but then as one can see from above (refer to question 4.2.2.6) they answered in the negative in the last question regarding the effectiveness of monitoring process in general.

With regards to monitoring in general, EU Member States have referred to the lack of provisions about monitoring in the EIA Directive and called for the introduction of a requirement to monitor impacts in line with Article 10 of the SEA Directive. Such knowledge basis would be useful in making in depth and experience based assessments in later EIAs.

On another note, in an attempt to conform to EU environmental monitoring Directives, Malta’s monitoring systems have been expanded and information will be freely available to scientific communities, policy-making stakeholders and the private sector. This newly upgraded monitoring system will also enable baseline studies. This project will facilitate the development of more informed and better targeted policy measures in environmental, social, economic, and health areas. 4.9 million Euro were invested in environmental monitoring equipment, information management systems, delivery of environmental baseline surveys, staff training, and the development and improvement of the national monitoring programmes for air, water radiation, noise and soil. The information gathered by the monitoring system will made available freely online as from July 2013 onwards. New orthophotos and high resolution aerial imagery will be used alongside satellite imagery in environmental monitoring.

An air quality baseline has been carried out and a soil baseline is currently being carried out. This project will help the public become more aware of environmental trends affecting their
health and quality of life, will benefit policy makers, the scientific community and the business community. Government entities and institutions can sustain long-term effective cost efficient environmental monitoring programmes (Malta Today, 2013).

4.2.3 Public Response

Public participation should lead to plural interpretations of the objectives, design and use of assessment instruments (Cashmore, 2010). EIA promotes discussion and participation of the public so the public influences environmental planning and decision-making (Elling, 2004). This direct participation renders the EIA process more democratic and inclusive, and helps resolve conflicts more easily. However there is no consensus on the answer to the question if public participation is actually effective and influential.

4.2.3.1 Weight given to the public response

<table>
<thead>
<tr>
<th>Group No.</th>
<th>What weight is generally given to the public response to the potential development project?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
</tr>
<tr>
<td></td>
<td>Respondent 1: Fair</td>
</tr>
<tr>
<td></td>
<td>Respondent 2: Neutral</td>
</tr>
<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
</tr>
<tr>
<td></td>
<td>Respondent 1: Neutral</td>
</tr>
<tr>
<td></td>
<td>Respondent 2: Minimal</td>
</tr>
<tr>
<td>3.</td>
<td>Public sector professionals – employed at MEPA</td>
</tr>
<tr>
<td></td>
<td>Respondent 1: High</td>
</tr>
<tr>
<td></td>
<td>Respondent 2: High</td>
</tr>
<tr>
<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
</tr>
<tr>
<td></td>
<td>Respondent 1: Fair</td>
</tr>
<tr>
<td></td>
<td>Respondent 2: N/A</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
</tr>
<tr>
<td></td>
<td>Respondent 1: None</td>
</tr>
<tr>
<td></td>
<td>Respondent 2: None</td>
</tr>
</tbody>
</table>

Table 4.10 - Weight given to the public response
As regards the weight generally given to the public response to the potential development project, only MEPA respondents said that this was high and that massive weight is given to the public opinion especially when infrastructural projects are involved. In fact, one of the MEPA respondents said that ‘MEPA goes out of its way in this respect.’ One of the public sector consultants explained that there would be consultations with the general public response. In most cases, the public echoes issues raised by some particular NGO or other entity. Often the public response, according to the latter interviewee, ‘uses a tactic to flood the related EIA consultant.’ The same respondent also cites examples in which nine hundred (900) queries were made for one EIA. Such tactics are a cover up for a completely negative approach towards a particular project. Often mitigation measures are not considered. The only objective is to stop the project at all costs. Moreover ‘political pressures by the public, parties in opposition, local councils, pressure groups and NGOs are very effective.’ A project is often delayed and/or stopped because the developer would not have enough money for further investment. This echoes Naim’s (2004) observation that public hearings can be hijacked by a dominating group and recalls the National Commission for Sustainable Development (2004)’s fear that such hearings can be dominated by lobbies. However, in many cases, as Sinclair et al. (2008) said public opinion plays second fiddle to influential developers’ priorities. There is an inconsistency regarding the influence of public opinion from case to case due to the particular nature of each case.

MEPA officers argued that a considerable weight is given to public opinion, especially when infrastructural projects are involved. When such sensitive projects are involved, there is a high amount of communication. One MEPA officer outlined elaborately the process of public participation and said that consultants engage social anthropologists to analyse in depth the affected parties. Another officer said that ‘public consultation in Malta is very effective and goes beyond what is provided for by the EU EIA Directive and the Aarhus Convention.’ Public opinion is well organised, with objectors leading a sophisticated campaign to oppose projects. Several comments appear on the media. MEPA receives objections through its Customer Services and these objections are addressed in the EPD report, planning directorate report and the board decision under different sections. According to the same MEPA officer, ‘comments also come from the part of the consultant or from the MEPA internal technical assessment. Any valid point is studied.’ In fact the same MEPA respondent continues by saying that ‘public response is an integral part of the process and there are projects which went back to the drawing room.’ Although certain projects are
deemed to be important for all the community, the public does not want these particular projects in their neighbourhood. ‘The public often are in favour or against a project in a mechanical way and do not consider impacts.’

In sharp contrast, NGOs categorically said that the weight given to the public response is minimal and gave examples to reinforce their opinions. One said that public participation is a sham and that even Local Councils place political agendas of the group in majority to the fore and discards the community effects. Both of the NGOs referred to several examples of public hearings which were ‘dominated by developers and their friends’ and where locals were not given enough time to express their opinions. In addition, one of the NGO respondents referred to a particular public hearing for a major project in Gozo where ‘expatriates of the island were not allowed to participate because at ‘they did not know Maltese in spite of the fact that English is one of Malta’s official languages.’

Academics and one of the public sector employees brought up the issue that public participation is put aside due to hidden agendas and political issues. As a matter of fact, government also carries out surveys behind the scene to know how a proposal is affecting people’s outlook towards the Government as regards a proposed project. Maybe EIA is at times dominated by socio-economic needs as the government would be more interested in satisfying such current needs than conserving the environment. However they criticised the way the badly informed media misleads the public by giving it an incorrect general view.
4.2.3.2 Weight given to the Public Response with a small number of directly interested Stakeholders

<table>
<thead>
<tr>
<th>Question</th>
<th>What weight is generally given to the public response when there is only a small number of directly interested stakeholders?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No. Stakesholders Interviewed</td>
<td>Respondent 1</td>
</tr>
<tr>
<td>1. Private sector professional consultants</td>
<td>Low</td>
</tr>
<tr>
<td>2. Academics (considered as professional planners)</td>
<td>Neutral</td>
</tr>
<tr>
<td>3. Public sector professionals – employed at MEPA</td>
<td>High</td>
</tr>
<tr>
<td>4. Public sector employees (indirectly involved in the EIA process)</td>
<td>N/A</td>
</tr>
<tr>
<td>5. Members of environmental non-governmental organization (NGO)</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

Table 4.11 - Weight given to the Public Response with a small number of directly interested Stakeholders

One representative of each of the private sector professional consultants, academics, public sector professionals said that usually the opinion of a small number of stakeholders has a minimal effect. In contrast a MEPA officer argued even a small group of stakeholders can be effective if they afford to engage a consultant and present sound arguments in a professional way. Moreover another respondent believe that stakeholders who have a direct personal interest in a project will do their utmost to make themselves felt.

Information is passed on to the public through advertisements in local newspapers, the Government Gazette and MEPA’s website. The interested Local Council is also consulted. Besides affixing a site notice on the site of the proposed development, and to noticeboards provided to MEPA by Local consulted, the public is also invited to submit comments to be included in EIA report. However, it seems that public participation in Malta is not very active and intelligent as only the MEPA officer said that they are influential and contributive.

In general, according to one of the academics, the Maltese public may be ‘egoistic and biased’. In the cases of infrastructural projects, there tend to be sections of the public who do not have an ‘authentic interest’ but are against change or want to feel secure in a narrow minded way and are afraid to take collated risks offered by new development (Respondent -
Group No. 2: Academic). There are also cases where the public does have an authentic interest. Such opposition is very effective and has led to proposed projects being stopped or left pending, or sent back to the drawing room. This bias based on self-interest can be countered by more education. The eventual shift from non-formal knowledge to formal knowledge in future generations will help curb this bias which can presently hijack a project and reduce EIA effectiveness. Schools and media are working to increase environmental awareness and correct environmental information and a more educated public will look at environmental issues in a more objective and analytical way. These arguments recall Tomlison (2003)’s argument that the public is attracted by controversial projects not by the relevant characteristics at issue.

MEPA has invested heavily in significant technological improvements in its website on attempt to make it more user-friendly and more accessible. This redesign will help render EIA more effective as it will help the public participate more actively in the EIA planning process to make its findings more accurate and strong. However, there is a data overload and certain discrepancies in information provided. The public decision component of the EIA is being enhanced by the provision of the opportunity for the public to participate in the drawing up of the Terms of Reference for particular developmental proposals.

4.2.4 Follow-Up

There is no doubt that follow-up is an EIA stage of utmost importance, because it has to do with the final design, construction, operation and decommissioning and project and environmental management (Morrison-Saunders and Arts, 2004b), which should be based on the conclusions of the EIA process. Environmental outcomes have to be monitored, evaluated, managed and communicated. Follow-up checks whether mitigation measures have been implemented, and is responsible for assessing the effectiveness of measures taken for a particular development, and for providing guidance for future applications of EIA. The actual effects of a development on the environment have to be assessed through follow-up. Follow-up benefits the developer, decision makers and the environment. However literature
points out that follow-up is difficult in practice because of vague and imprecise terms, vague and qualitative impact predictions, lack of guidance, costs, and reluctance of developers where it is non-mandatory.

### 4.2.4.1 Follow-up to the EIA Process

<table>
<thead>
<tr>
<th>Question</th>
<th>Do you think that follow-up to the EIA process is necessary?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group No</strong></td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1.</td>
<td>Private sector professional consultants</td>
</tr>
<tr>
<td>2.</td>
<td>Academics (considered as professional planners)</td>
</tr>
<tr>
<td>3.</td>
<td>Public sector professionals – employed at MEPA</td>
</tr>
<tr>
<td>4.</td>
<td>Public sector employees (indirectly involved in the EIA process)</td>
</tr>
<tr>
<td>5.</td>
<td>Members of environmental non-governmental organization (NGO)</td>
</tr>
</tbody>
</table>

Table 4.12 - Follow-up to the EIA Process

All interviewees agreed that follow-up to the EIA process is necessary.

Two respondents of the MEPA officers and the academics explained the follow-up is there to be enforced. In fact, the MEPA officer argued that the directorate conceives of follow-up as a submission of impacts and enforcements as an iteration and not as a linear process made up of two (2) different entities. The latter stated that follow-up is always carried out and that great emphasis is placed on the conditions demanded in the permit as regards mitigation measures.

According to a MEPA officer, the setting up of MEPA’s new Enforcement Directorate is expected to yield positive results. This was set up to enforce MEPA’s laws and policies on a daily basis and address illegal development fast and effectively. The Directorate gathers enforcement practices under one roof so all disciplinary actions being taken are centralised and streamlined helping MEPA to take a proactive stance rather than the usual reactive stance. Enforcement translates MEPA’s decision into real form on the ground. Increased direct action has led the public to be more self-disciplined and be more compliant with
MEPA’s decision. Centralisation of enforcement has developed a stronger sense of synergy and co-ordination between different offices. Problems are being dealt at an early stage avoiding irreversible problem. The directorate aims to increase its level of criminal prosecution, and introduce a stronger deterrence system (MEPA Newsletter, 2011).

A private sector consultant said that follow-up is necessary but was not satisfied with the way the EIA process is adopted in Malta because the one who is carrying out the EIA has the onus specified by MEPA that s/he can say what the impacts are. Opportunity to advise on follow-up should be given to a wider circle.

### 4.2.4.2 The Follow-up of Mitigation Measures

<table>
<thead>
<tr>
<th>Question</th>
<th>To what extent is the implementation of mitigation measures ‘followed up’ by MEPA or other authorities?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group No.</td>
<td>Stakeholders Interviewed</td>
</tr>
<tr>
<td>1. Private sector professional consultants</td>
<td>Very Rarely</td>
</tr>
<tr>
<td>2. Academics (considered as professional planners)</td>
<td>N/A</td>
</tr>
<tr>
<td>3. Public sector professionals – employed at MEPA</td>
<td>Fair</td>
</tr>
<tr>
<td>4. Public sector employees (indirectly involved in the EIA process)</td>
<td>N/A</td>
</tr>
<tr>
<td>5. Members of environmental non-governmental organization (NGO)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Table 4.13 - The Follow-up of Mitigation Measures*

One of the private sector professionals said that the implementation of mitigation measures is very rarely followed-up by MEPA or other authorities. In contrast the other member of Group 1and one of the MEPA officers said that a number of issues are actually governed by contracts, and ‘developers are more careful than before to implement mitigation measures.’
4.2.5 Effectiveness in General

All interviewees believe in the advantages of EIA when EIA is carried out in an appropriate way, and in the improvement of EIA throughout the years since its first implementation in Malta in quality, process, learning curve, and decision-making.

Learning Curve

All agreed that the learning curve has improved as practitioners are learning from the past, researching literature, Internet and meetings and the EIA quality has inevitably increased. They called for deeper training and use of more sophisticated equipment and better capacity building, so that the quality of EIA compilation would be enhanced. NGOs need funding for more research which would help them ‘challenge impact reports’ in a serious information-based way (Respondents - Group5: both NGOs).

Practitioners are doing their utmost to fill in the gaps in EIA and are banking on past experience. Although not provided for by law, method statements are made with the aim of complying upfront with MEPA to reduce time consumption and conflict; such statements help the public understand projects better and look at the whole EIA process in a positive way in an appropriate and realistic way and because of the objectives to be reached mainly for sustainability.

The effectiveness of EIA will be in the balance in the near future since future generations will be more environmentally educated as schools are educating students in this regards. Such education is shifting environmental knowledge of future adult citizens from non-formal to formal.

The EIA practitioners believe that as prerequisite for quality in EIA there should be a greater investment in building capacities of professionals and compiling EIAs, deeper training and more sophisticated equipment. This should be an on-going process to eventually join the EIA quality to the learning curve to strengthen EIA, as these are the two key factors in improving the effectiveness of EIA.

EIA practitioners so pointed out that EIAs are too difficult for the public to understand and the MEPA Website is user-unfriendly. Since EIA reports are voluminous and are communicated
in difficult language beyond the public’s comprehension they intentionally put the interested public off.

**Lack of transparency due to political interference**

Uncertainty and lack of transparency in EIA process are other factors which make the EIA process ineffective. An academic pointed out that what on paper seems to be a positive conclusion may turn out to be a refusal. This inconsistency leads to uncertainties and fosters lack of trust. Professional consultants and one member of the NGOs criticised the direct influence on public opinion and the resultant influence on decision makers exercised by the media, which is often not well informed about particular projects and still voices its views which may be incorrect and give the public a false picture.

Another negative point raised by an academic is that the EIA process is only carried out to conform with EU law because it is not really needed as the environmental impacts in these cases are there for all to see implying that the way EIA is implemented renders it superfluous. They also argued that both political parties favour EIA to please voters but in reality they defend the developers’ interests rather the public’s interests. A good deal of lobbying takes place and this has a greater influence on MEPA than EIA process.

Political interference happens in many countries, echoing Heinma and Poder (2010) who said that rational and political decision making are not mutually exclusive, but such interference should be transparent and accountable. One respondent pointed out that MEPA may overrule a case officer’s proposal for approval due to politicians’ or NGO’s influence on MEPA’s decision-making. Another respondent also argued that the MEPA Board’s decisions are often erratic, being misguided by the electorate and there being too many loopholes which may give rise to abuses.

MEPA Board members are appointed and autonomous, and are therefore not accountable to anybody. An academic refers to cases which complied with the local plan and the permit was refused while in other cases which generated much more negative impacts, permission was given. These anomalies clearly show a lack of conceptual framework and that politicians can exert pressure and stay hidden behind the apparent autonomy and independence of the MEPA Board. This pressure is exerted to win votes, or not to lose votes or to generate economy at
all costs. The same respondent said that in certain cases it is clear that politicians influence EPC/MEPA Board.

**Delivering Sustainability**

One academic representative said that although there is plenty of room for improvement, EIA at least gives a minimum quality assurance to the public who feel secure in the knowledge that the EIA will ensure minimum negative environmental impacts. This can be better achieved with more regulation and consistent implementation and enforcement. Another academic reinforced this view saying that more concrete guidelines and observance are needed to achieve even better quality and consistence as this means more effective EIAs and more trust from the public. Sustainability should be deeply embedded into EIA thinking and process if sustainable development improvement is to be achieved (Morrison-Saunders, A & Retief F, 2012), and EIA has to be thorough to help attain its objectives (Stookes, 2003). However, in several case studies considered in this study, theoretically valid EIAs are hampered in implementation by their contextual set up. For example in East Africa, Maldives and Lithuania socio-economic and political agendas interfere heavily with EIA performances.

Although EIA is an environmental tool with a massive potential to achieve sustainability (Sheate, 2009), its actual contribution to the realisation of this objective is debatable. According to Cashmore, M. et al. (2004) EIA influences only consent and design decisions moderately but often falls short in minimising impacts, let alone avoiding irreversible impacts. This applies to EIA in Malta. The policy is sound but the implementation is rather weak. There is a gap between policy frameworks and application practice. There is a discrepancy between legislation and implementation, and lack of flexibility, and consideration of socio-economic values lags far behind that of environmental, archaeological and cultural values. MEPA officers in fact agreed that there is room for improvement in the implementation and enforcement. However they also pointed out the need for more regulations. International literature, as we have seen, does not have faith in more rigid regulation but proposes flexibility and practicality. They have no doubt that EIAs remain expertly studies but they are often overruled and ignored. There is no consistency. This does not call for more rigid regulation, as MEPA officers have said. Legal arrangements and more rigid legislation do not guarantee more EIA effectiveness and more sustainable outcomes.
What is needed in Malta is more practical understanding of sustainable issues and a flexible EIA which addresses environmental, social, economic and cultural issues in a holistic way, and more consistent and reliable enforcement.

As regards regulations, on one hand, stringent screening hinders economic growth while on the other hand absence of screening leads to wastage of resources. Whereas a thorough EIA ensures quality EIA, too many expenses and delays are involved. Hasty and shorter EIAs for small projects may solve the expense problem but may lead to lengthy delays later. If small projects are not eligible for EIA not to hinder economic growth, minor impacts of several projects may add up to large cumulative sum total of negative impacts. MEPA officers and Gozo group said that, strictly speaking, EIAs in Gozo are not only mandatory for large scale developmental projects. Projects that are near archaeological sites or are obviously sensitive areas like agricultural areas and high landscape sensitivity values, which are given great importance or have serious predicted impacts like quarries are all submitted to EIA process. However these qualifications imply that after screening, small scale projects tend to be judged as ineligible for EIA.

Finally, respondents also said that EIA is not effective and alternatives must be sought and implemented in an appropriate way, since mitigation measures are not being carefully identified and effectively addressed. Another point was that improvement led to more time consuming and expensive bureaucracy. In fact, one pointed out that a developer intending to embark on a huge project must first be in a financial position to cover enormous expenses related to such bureaucracy.

**Register of Consultants**

The NGOs and academics interviewed were categorically pessimistic about the Register of Consultants, their main argument being that the fact that developers paid for the consultants’ study undermined the validity of the study. An academic added that there were a number of difficulties about the criteria to be used in compiling such a register. The latter respondent also alleged that the system of negotiations adopted in Malta blunts the effect of a register of consultants. The same respondent argued the EIA practice in Malta has been ineffective in mitigating potential negative effects of development as could be seen by the ruin of the world heritage protected skyline of Valletta, and this shows the whole corrupt set that regulated...
major projects. The MEPA officials were not so categorical but still implied their scepticism towards a register of consultants. One argued that it would be very difficult to set up a criterion for choosing members of a Register of Consultants. The other said that it would not be fair to give a chance to some consultants only.

The criteria for choosing consultants to be members of a Register of Consultants might be difficult since experience is as important as academic qualifications. However EIA Subsidiary Legislation 356.09 – 38 (3) says that the Registration and Review Board may grant a temporary certificate for one year to any person deemed by the Board to be an effective and efficient member. This gives the chance to a member to prove himself and be later judged on his/her performance. 38 (4) of the same Regulations also provides for appropriate training courses organised by the Authority. On the other hand since the Registration and Review Board judges who become a member in the Register of Consultants, this must base its decision on transparent criteria, which are missing at the moment since the issue of Register of Consultants has not yet been dealt with in Malta. A Registry of Consultants chosen appropriately on a set of transparent guidelines will no doubt strengthen the whole EIA process.
4.3 Site-Specific Projects

Monitoring reports need to be accessed so EIA effectiveness could be evaluated through assessing post-permit monitoring reports vis-à-vis the Board’s final decision and the EIA reports to see if the conditions set in the DPA reports are being monitored or not. These conditions can stop a development project because of long-term impacts.

The researcher contacted the case officers of twelve (12) accessible EIA in Gozo. Some case officers said that they were no longer part of the planning team, others did not answer, others said that too much time has passed to the issues involved in EIA of the case they covered, and only one answered the researcher’s questions.

When the researcher asked for the post-permit monitoring reports at the MEPA library, only case officers’ reports were provided, and not the needed post-monitoring reports; this was a result of some sort of misunderstanding and led to delays and time wastage. Finally, the researcher was advised to seek the post-monitoring reports online but again was misled and the needed material was not found online. Despite being referred to a number of different individuals in the hope of accessing post-monitoring reports, these attempts also proved futile. The researcher was provided with a lot of information and statistics which proved irrelevant.

Finally the researcher was told that MEPA office in Malta had nothing to do with the monitoring of EIAs in Gozo. The researcher’s attempts to find and access post-monitoring reports in Gozo led nowhere. The search in the Gozo MEPA offices resulted only in finding a financial estimation of carrying monitoring reports in one PA file. This shows that, even if monitoring is carried out, information availability is limited. Vague and conflicting responses led the researcher nowhere.

The largest numbers of EIA in Gozo have been carried out in the categories of Extraction, Agriculture and Coastal. Most of EIAs in the Extraction Category are related to soft stone quarries which provide stones for building. All agricultural EIAs have to do with farms. It should be noted that it is reasonable that a great attention is given to farms. They are one of the main characteristics in Gozo and being in ODZ, there are more documents about them. The Coastal category includes Port/ Harbour/Marina facilities, the harbour being the direct link between Gozo and Malta which is Gozo’s lifeline and the Marina being the berth of a
large number of locals’ fishing boats and yachts which enhance Gozo’s domestic sector. Although there are a number of infrastructure projects that have to do with two of the main economic pillars, tourism and industry, there is a small number of EIAs online. One notes the absence of EIA for large scale developmental projects online, which are indicated as ‘pending’ and have been so for a considerable number of years.

The author of this study was told that only twelve (12) out of these forty-seven (47) EIAs are found in the library. The others are accessible only on request and this has turned out to be lengthy time consuming process, beyond the time available to me to complete the author’s research. As a consequence it appears that effective public involvement is discouraged as not all EIAs are placed online. Lack of accessibility of a significant number of EIAs clearly shows that the principle of public participation mentioned in the Aarhus Convention and good governance is being infringed. This leads one to speculate that no follow-up is being carried out most probably due to physical pressures stemming from Gozo’s geo-social characteristic.

The fact that post-monitoring reports are not easily available in the public domain and the ineffective bureaucratic way the requests made for the study were dealt with, clearly mitigate against proactive follow-up and scrutiny.
Chapter 5

CONCLUSION &
RECOMMENDATIONS
Chapter 5

Conclusion & Recommendations

5.1 Introduction

This chapter includes the main conclusions of this work, concerning the effectiveness of the Environmental Impact Assessment process in contributing to all spheres of sustainability in the Maltese Islands through examining the strengths and weaknesses of public participation, predicted impacts, monitoring, mitigation measures and follow-up. Each of these factors have strengths and weaknesses and this leads to a rather complex situation to be interpreted. However, the presence of a large number of weaknesses clearly shows that EIA cannot be effective unless these weaknesses are addressed. The conclusions presented here are based on the analysis of data gathered in the light of a review of relevant literature. The conclusions of this research are also used to derive recommendations to improve the functioning of the EIA process in the Maltese context.

The EIA process in Malta has ripened after more than twenty (20) year experience and it is time to review whether it is being effectively implemented and if its sustainability objectives are being attained. There is no doubt that it investigates environmental impacts of proposed developments in advance with the objective of protecting the environment and of leading to sustainable development where and when it is practised appropriately. Besides, since Malta is small and has limited resources, and therefore depends excessively on international trade and specialisation, development and environment are entwined and sustainable development is undoubtedly a major issue for survival.

The process of EIA in Malta appears to work well as a general rule but shortcomings remain, with these remaining mainly to the following areas (i) to the effective application of the Environmental Impact Assessment process, (ii) the extent to which EIA is influencing
decision making and (iii) EIA’s attempts to achieve environmental sustainability. The legal framework for EIA in the Maltese Islands is in line with the aforementioned European Union EIA Directives, one of which is the Aarhus Convention which provides for public active involvement from the initial EIA stages. Conversely, there are still ambiguities in the application of EIA itself arising at least partly from the complexity of the process, which presents difficulties for implementation, and limits public participation.

Feedback from respondents interviewed for purposes of this study suggests that EIA’s potential to guide Malta towards environmental sustainability is being dented by weak implementation, due to human capacity constraints, the failure to set up a Register of Consultants provided for in EIA regulation to avoid bias in developers’ favour, political unwillingness to prioritise environmental issues, ineffective public participation through politicians’ reluctance to heed the public voice and the ‘environmentally immature’ (Respondent – Group 2: Academic) public’s greater attention to immediate self-interests than to genuine environmental concerns, and lack of transparency and consistency in the Malta Environmental Planning Authority’s decisions, in turn inspiring distrust amongst the public. Apart from this, it was also pointed out that recently the learning curve of stakeholders involved has improved. Developers are gradually becoming more professional and responsible, the public are becoming more aware and educated, consultants are becoming more professional and up-to-date through training and experience, and Malta Environment and Planning Authority (MEPA) officers are becoming more expertly. Research and technological improvements have also led to this advance.

In fact, MEPA has also generated information and enhanced exchanging of information up to a certain extent. There has been recent effort in improving the MEPA’s website by making it more user-friendly through technological improvements. Correspondingly, the human health and safety component is being dealt with. Human Health Impacts (HHI) in EIA will be collated under one chapter.

In spite of these recent positive steps in this regard, little attention is given (i) to the technical shortcomings related to EIA implementation include the lack of a holistic approach (which integrates environmental, health, social, economic, cultural issues), (ii) to cumulative effects due to lack of clear guidelines and of discussion with other EU Member States, which voiced the same concern in this regard, and (iii) to the absence or inaccessibility to the public of
information concerning follow-up measures (including implementation of mitigation efforts) on which EIA’s success in achieving its environmental sustainability objective rests heavily. Furthermore, little attention is given to predicted impacts and mitigation measures in cases of development projects deemed ineligible for EIA.

5.2 **Recommendations**

- The Register of Consultants should be set up as provided for in Part VI of L.N. 114 of 2007 of the Environmental Impact Assessment Regulations after revising the aforementioned regulation to include written criteria for listing in the Register, including appropriate qualifications.

- Individual feasibility studies of sectoral areas on different aspects such as economic, hydrological, social, geological feasible studies should be carried out so as to see if the project is worth pursuing from the beginning.

- Collaborative approach, consisting of training sessions and workshops for those involved in all the EIA process stages which bring to the fore EIA shortcomings and how to address them, and the development of collaboration among experts involved in EIA which leads to a holistic approach should be adopted.

- Non-Governmental Organisations valid participation must be enhanced by funding for research and in order to further their knowledge.

- Local Councils should engage specialists to advise and guide their involvement in public participation and be given greater attention by MEPA.

- Public’s environmental education should be enhanced to help public in a valid informed way through:
o A more user-friendly MEPA website. This can be achieved by having a cleaner user interface. A better distribution of data across the site that is grouped according to sections specifically for EIAs;
o Making use of a variety of media, the traditional and modern media like the social media;
o Concise effective, easily understandable means to convey relevant information to public like flowcharts and diagrams;
o Media is trained to pass on correct information in an easily understood way.

- Enforcement of monitoring during the construction and more importantly during the operational stage should be considered as the crucial factor in EIA process as EIA success depends on enforcement to pass from the theoretical stage to the practical stage and actually achieve its objectives.

5.3 **Concluding Comments**

These shortcomings all stem from lack of adequate and fair enforcement throughout the EIA process, especially in the follow-up stage which actually determines the quality of EIA’s implementation. Follow-up has a controlling function as it checks if EIA impact predictions were correct and if the impacts are within EIA limits, a learning function as it helps more accurate future prediction, and a democratic function since it increased transparency and EIA credibility. Without proper enforcement these aims cannot be achieved.
Appendices
Appendix 1

Raw Data Sheet
<table>
<thead>
<tr>
<th>Town</th>
<th>Case Number</th>
<th>Category</th>
<th>Sub Category</th>
<th>EIA Type</th>
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Appendix 2
Exchange of e-mails between
Author & EPD Unit
Good morning,

Following your below request kindly note hereunder the list of Environment Impact Assessment's that we have available relating to Gozo. You may wish to review such list and advice which EIA's you are interested in viewing.

An appointment will then be established with our librarian Mr Raymond Cremona and requested EIA's will be made available on such date.

PA 5277/96 - Ta' Cenc
PA 7379/98 - Tuna Penning Project Proposal @ Newwiela Gozo
PA 6510/01 - Development of Tuna Farm, Qala Gozo (Project Description Statement)
PA 6569/02 - To sink two vessels to enhance dive site, Site off ix-Xatt I-Ahmar Ghajsielem
PA 3798/02 - Hondoq ir-Rummien Gozo
PA 1548/02 - Construction of an urban waste water treatment plant Ras il-Hobz Gozo
PA 7491/03 - Construction of waste transfer station at Tal-Kus Xewkija
PA 3309/93 - Extension of Hardstone quarry Nadur
PA 5618/98 - Application to operate soft stone quarry l/o Gharb
PA 564/01 - Extension of disused soft stone quarry at Ta Slima San Lawrenz
PA 6066/97 - Development of 129 industrial units at Ta Xhajma Gozo (Co-ordinated Assessment)
PA 5707/07 - Mushroom Cultivation Unit Ta Dbieghi Kercem (Project Description Statement)
PA 3445/96 - Erection of a turkey unit Victoria
PA 427/00 - Sanctioning of an extension to an existing cow shed at Triq Qasam San Gorg Kercem

Should you need further information kindly do not hesitate to contact us again.

Regards

EPD-Environment Assessment Unit
Malta Environment and Planning Authority
St. Francis Ravelin
Floriana
To whom it may concern,

I am a university student reading the course of MSc. Sustainable Environmental Resources Management with the University of Malta and James Madison University. As part of my studies I am currently collecting information that will help me complete my dissertation, which examines the research on analysis, categorisation and processes all the projects that underwent and Environmental Impact Assessment in Gozo (i.e. in all localities through the years).

I would like to fix an appointment with you to deliver some information and to be able to make use of the library.

Looking forward of hearing from you soon.

Many thanks in advance.

Best Regards,

Romina Sciberras
Appendix 3 (A-C)

Interview Guide Sample
Interview Guide Sample

Interview Guide for: ________________

Introduction

This study aims to explore the effectiveness of the EIA process in the Maltese Islands through an understanding of factors which may have an influence on the effectiveness of EIA, focusing on:

(i) procedural issues;
(ii) the influence of the EIA process on planning decisions, and
(iii) its contribution to modifying project design/implementation through mitigation measures which minimise environmental, social, economic, cultural, and health impacts of a negative nature.

Warm Up Phase

As a representative within the _______________, I would like to start by asking you to describe the depth of knowledge on EIA.

Discussion

> This section was composed from a set of questions that were adopted according to the interviewee <

- Pending Permits. Why?
- Major Permit Proposals.
- Predicted Impacts. How well are impacts predicted? Any improvements?
- Alternative to EIA due to many small-scale projects.
- Register of Consultants

Closure

- Do you have any further comments you would like to add about anything that we have discussed?

Thank you for your time.
Appendix 3A

Semi-structured interviews
Appendix 3A  Semi-structured interviews

Interview Guide for ______________

Predicted Impacts

1. Do the EIA team give priority or disproportionate importance to a specific type of impact and/or environmental/socio-economic component? (for example, economic impact, cultural/aesthetic impact, environmental impact or social impact)

2. How effective and/or comprehensive is the EIA process in assessing and addressing cumulative, indirect and synergistic impacts?

Public Response

3. What weight is generally given to the public response to the potential development project?

4. What weight is generally given to the public response when there is only a small number of directly interested stakeholders?

Monitoring during Constructional or Operational phases of the project

5. To what extent is such monitoring implemented throughout the project’s lifetime?

6. Is the data from monitoring made publicly available?

7. Is the implementation/management of the project modified in response to monitoring data?

8. Who is responsible for overseeing the monitoring process and for analysing the data obtained?

Follow-Up

9. Do you think that follow-up to the EIA process is necessary?
10. To what extent is the implementation of mitigation measures ‘followed up’ by MEPA or other authorities?

11. In your experience; do developers implement all, some or none of the mitigation measures recommended in EIA?

12. Do you think that monitoring during construction is changing the environmental behaviour of developers and contractors?

13. Is project follow-up given publicity by the authority?

14. Will the publication of monitoring reports by the environmental agency likely alter the behaviour of developers?

**Effectiveness**

15. How effective do you feel that the EIA practice is in Malta? How well has it worked to mitigate potential negative effects of development?

16. What do you feel are the strengths and weaknesses of EIA practice in Malta?

17. To what extent do you feel that, the above, limits the effectiveness of the EIA process?

**Comments**

18. Do you have any comments you would like to add about anything that we have discussed?
Appendix 3B
Interview Questions aimed at Group 4
Interview Guide for Public Officers ONLY

- **Effectiveness:**
  - (General) How effective do you feel that the EIA practice is in Malta? Gozo?
  - (General) How well has it worked to mitigate potential negative effects of development?

- **Public Participation:**
  - What weight is generally given to the public response on any particular issue (mainly controversial ones)?

- **Monitoring during Constructional or Operational Phases of the project:**
  - *To what degree do you agree on the statements below:*
    - Monitoring throughout the project’s lifetime is important.
    - Monitoring data reports made publicly available.
    - Someone should be trained and responsible for monitoring and for analysing the data obtained. (Governmental/MEPA or private expert?)

- **Follow-Up:**
  - *To what degree do you agree on the statements below:*
    - Follow-up to the EIA process is necessary.
    - Developers and contractors should be concerned about the environment.
    - There should be follow-up reports.
    - Follow-up reports should be made publicly available.
Appendix 3C

Interview Questions aimed at Case Officers
Interview Guide for ______________ (PA __________)

1. Did the EIA makers and/or decision makers give priority to a **specific impact**?

2. Was there an **impact shift**?

3. Were **indirect impacts considered**? If so, to what extent, and how were these **identified and assessed**?

4. How **strong was the liaison** between members of the EIA team and between interested parties?

5. To what extent were **cumulative impacts addressed** in the EIA? How were such impacts **determined**?

6. Were there any **other projects taken in consideration** in the EIA of this specific project in order to assess the cumulative impact?

7. What were the **sensitive elements in the study area**?

8. Was there any **follow-up to the project**, to ensure that mitigation measures recommended were implemented?

9. Were **impacts of the project monitored post-EIA**? Who was **responsible** for such monitoring?

10. From scale from 1 to 5 (5 being the best), please rate which you feel best fits your answers for each of the statements below.

   i. Mitigation measures were practical/realistic and reasonable.

   ii. The collated EIA succeeded in preventing, minimising and offsetting or compensating negative environmental impacts.

   **Thank you for your time.**
Appendix 4
Covering Letter
Appendix 4

Covering Letter

Dear ____________,

I am undertaking a dissertation as part of my Msc. in Sustainable Environmental Resources Management at the University of Malta and James Madison University. My research seeks to examine the effectiveness in minimising or mitigating negative environmental impacts of development in Gozo from a desk study research and interview surveys of environmental consultants. At present, no research has been conducted into the opinion of stakeholders about this specific issue.

In order to achieve my results I have developed a set of open-ended questions, to gain a more in depth understanding of the topic and to analyse some factors that strengthen the above statement. This information is essential for the successful completion of my studies.

I would be really grateful if you took the time to interview you (preferably first week of July), to deliver some information. The meeting would last around 45 minutes and the information provided is entirely anonymous, and information collected will be presented in data format. The University of JMU has an ethical code that all students are obliged to follow when undertaking research.

I look forward to meeting you and thank you for your time and consideration. Should you require further information please do not hesitate to contact me at this email address.

Many thanks in advance.

Yours sincerely,

Romina Sciberras
Appendix 5

EIA Review Permission Application
EIA / Copyright application Form

Name and Surname
Remina Selberras

Address
Casa Sigari
Taylor St
Kerema, Gizo

ID number
344896

EIA(s) requested for viewing
1. PA 7279/98  5. PA 3448/96  9. PA 5317/07
2. PA 6310/01  6. PA 8435/94  10. PA 564/61
3. PA 6569/02  7. PA 8666/97  11. PA 749/63
4. PA 1548/02  8. PA 427/00  12. PA 359/93

13. PA 5271/9  14. PA 3498/10
15. PA 3449/19

Reason for viewing / requesting such information.
(E.g research, student, commercial, other)

MS 400 SEM student researching, PA goes to
be used for my dissertation

Signature

Date
25/06/2012
Bibliography


Bell et al., 2007. Effect modification by race for association between PM2.5 and decrease in birth weight among black versus white mothers. Environmental Health Perspectives (EHP); 115(7), p.989–995.


DIRECTIVE 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage


Lee, N, R Colley, J Bonde and J Simpson, 1999. Reviewing the quality if environmental statements and environmental appraisals. Occasional paper number 55, Department of Planning and Landscape, University of Manchester.


Morello-Frosch, R. and Shenassa, E.D. 2006. The Environmental "Riskscape” and Social Inequality: Implications for Explaining Maternal and Child Health Disparities. Environmental Health Perspectives, Volume 114, Number 8.


