

Environmental planning and policy assignment (M7X01251)

Assessment: Report, collection of reports (Journal) and Conference presentation

Select an EIA of your choice. It is preferable to pick an EIA with which you are familiar for example, a bypass near your family home or Swansea Bay tidal lagoon. It is important you select and get hold of the document in plenty of time to be able to assess its application.

Using your chosen example, evaluate the process of EIA, comment on its supporting legislation, review academic literature and express opinion on any recent changes. This should include gaps that your example identifies between theory and practice.

Report format based on Environmental Impact Assessment Review. No more than 5,000 words excluding appendices. 70% of module mark. Wednesday 28th February 2018.

In 1970, the government of the United States introduced the National Environmental Policy Act (NEPA), due to “widespread recognition in the US in the 1960s that some major environmental problems were created by the government's actions” (Biglin, 2015:41). With the introduction of this Act the use of a new environmental prediction tool called Environmental Impact Assessment (EIA) was established.

Munn 1979 defined EIA as a tool that should “identify and predict the impact on the environment and on man’s health and well-being of legislative proposals, policies, programmes, projects and operational procedures, and to interpret and communicate information about the impacts”, (Glasson *et al*,2005:2). The second later definition identified by Glasson was the UK’s Department for Environment 1989 definition of EIA that “describes a technique and a process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the planning authority in forming their judgements on whether the development should go ahead” (Glasson *et al*,2005:2). The United Commission for Europe defined EIA in 1991 as “assessment of the impact of a planned activity on the environment” (Glasson *et al*,2005:3).

Since the NEPA act of 1970, EIA has been universally adopted worldwide as the preferred tool for predicting environmental impacts at a project stage before a proposed development can begin.

Although EIA’s vary in size and quality, the basic structure is based on the same principles. EIA can be developed by various government institutions or private contractors on behalf of a developer.

EIA's were first introduced in the United Kingdom in 1988 through the European Council Directive 85/337/EEC (ac.europa.eu,2017). Since its introduction the directive has been amended several times, with the newest amendment in 16th of May 2017. The Directive is implemented in the UK through the Town and Country Planning Act of 1990 and enforced by planning departments in Local Authorities.

Glasson states that since EIA's were introduced "it has been a major growth area for planning practice. The originally anticipated 20 Environmental Impact Statements (EIS) per year in the UK have escalated to over 600, and this is only the tip of the iceberg. The scope of EIA continues to widen and grow" (**Glasson et al,2005:2**).

The Environmental Statement (ES) that is produced by a contractor as part of an EIA is submitted to a local authority as part of planning permission for a proposed development. It is then up to the local authority to grant permission or deny the developers application. The ES should be used to gauge the potential environmental impacts of a development.

In 2010, an ES was submitted to Swansea City Council for the refurbishment of the Mumbles pier and construction of a new lifeboat station. This was submitted by a contractor Royal Harkening on behalf of the RNLI and the owners of the pier development Amusement Equipment Company Ltd, (AMECO). This report will refer to the ES submitted through planning system as the Mumbles lifeboat station EIA.

Thesis

"Since the advent of EIA in the USA in 1970 and its subsequent adoption around the globe, its effectiveness has been a particular concern in the EIA research and practice community" (**Barker and Wood, 1999; Christensen et al, 2005; Heiman and Powder, 2010; Retief and Chagall, 2009**), cited in (**Sandham et al,2013:155**).

This report will analyse the effectiveness of the EIA process using the case study of the Mumbles lifeboat station EIA. Some published authors criticise the effectiveness of EIA such as Wright et al, 2013 who argued that there are inconsistencies of quality in EIA and suggest an official review or external audit post development would standardise approaches.

This report intends to highlight the strengths of the EIA written by Royal Harkening DHV and to determine the shortcomings of its EIA process. The EIA for the Mumbles lifeboat station has many strengths in areas such as in its description of the baseline environment, its methodology in collecting baseline data, and its consideration of alternative options for development. In contrast, the EIA falls short in areas such as public participation and post project monitoring and subsequently there was no modification of the EIA. "Perhaps the clearest way to gauge whether EIA helps to

reduce a project's environmental impacts is to determine whether a project was modified as a result of EIA" (**Glasson, 2004:247**)

Roadmap

Using the example of the Mumbles lifeboat station EIA this report will examine:

Section 1 the general process and structure of EIA and identify the structures that EIA should follow in accordance to legislation. It will analyse whether the chosen EIA has a coherent and clear structure.

Section 2 will focus on the supporting legislation of EIA and identify the relevant legislation for the Mumbles lifeboat station EIA. It will examine legislation from the European Union, British Government and Welsh Government, and will focus on local policies and initiatives that should have an influence on the EIA.

Section 3 will undertake an academic literature review on EIA. The literature review examined worldwide publications less than 25 years old including peer reviewed journals, books, legislative changes, independent contractor reports, government websites, local planning websites and best practice guidance.

Section 4 will discuss the gaps between theory and practise found in the Mumbles lifeboat station EIA. The report will analyse if recent acts or policies would have changed this EIA if submitted today.

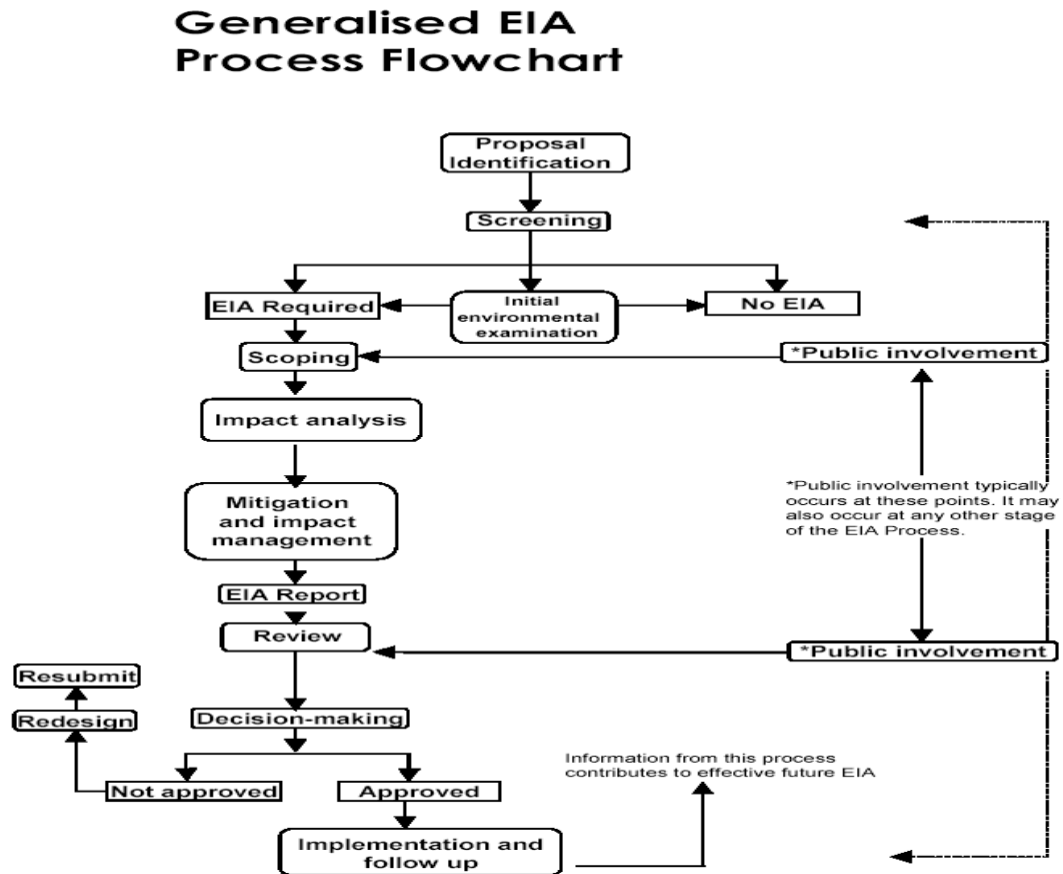
As an anti-thesis it will analyse the arguments against using EIA as an "aid to decision making at project level" (**Weston, 2000:185**). Some critics have argued for a comprehensive review of the whole EIA process and this will be discussed.

To conclude it will make five recommendations on further improvements to the EIA process and legislation, which should narrow the gap between theory and practice.

1. EIA process evaluation

EIA's follow the same structures worldwide as summarised in the flowchart below.

Figure 1: Flowchart of an EIA process



Source: Pacifica F. Achieng Ogola, 2011. *Environmental impact assessment general procedures. Environmental Monitoring and Assessment, Vol 1, Pp 423–497.*

When a proposal for a new development is made “a competent authority makes a decision about whether EIA is required. At the end of this stage, a screening decision must be issued and made public” (**EU Guidance on EIA Screening, 2001:9**). The competent authority must take a decision based on the potential impact of the project on the immediate environment. As described in the Mumbles lifeboat station’s EIA Section 2.1.1 “a formal Screening opinion was requested from the planning department of the City and County of Swansea with respect to the proposed scheme” (**Royal HaskoningDHV, 2010:7**).

The full Screening document was then uploaded onto the City of Swansea’s Council website (**Property.swansea.gov.uk,2018**). Members of the public could access any screening decision but need to be computer literate and have the relevant reference number in order to find the information. This may create a barrier for some members of the public during the consultation period.

The European Directive (97/11/EC) explains that developers may request a scoping Opinion from the competent authority which identifies the content and the extent of the assessment and specifies the information to be included in the EIA Report. (**EU guidance on scoping, 2001**) The guidelines also state that the Scoping stage is optional under the Directive. Mumbles lifeboat EIA did undertake Scoping in 2003 and “A Scoping opinion was requested from the City and County of Swansea. The opinion confirmed the findings of the Scoping study and provided additional comments” (**Royal HaskoningDHV, 2010:44**).

These comments were removed from the council website after consultation ended which is normal practice making it impossible to assess whether the consultation process was adhered to, whether there was wide public awareness raising, if the public had ample opportunity to respond and whether their responses were considered in the final planning permission. According to Glasson “Scoping is generally carried out in discussions between the developer, the competent authority, other relevant agencies and, ideally the public” (**Glasson et al, 2005:96**).

The EC Directive 1997 states that after adequate screening “The developer, or the expert(s) on his behalf, carries out the assessment. The outputs are presented in the final EIA report which contains: information regarding the project, a description of the baseline environment, the likely significant effects of the project, the proposed alternatives, the features and measures to mitigate these effects and a non-technical summary.” (**97/11/EC, Annex IV**).

A non-technical summary was published online by Royal HaskoningDHV for the Mumbles lifeboat station in October 2010 (**iema.net,2010**). As part of legislation the non-technical summary must be included in the final ES statement to act as an aid to decision making by the competent authority. This summary is used by the developer to help non-specialists working for the competent authority to make a decision on the development. The document summarises the terminology used throughout the EIA and defines the impacts. The terminology used is too complex, lacks accuracy and does not give a clear description of the impact of the proposed development for members of the general public. For example, a minor beneficial impact is defined “of minor significance but has some environmental benefit” (**Royal HaskoningDHV, 2010: iii**). This small environmental benefit should be summarised in the final ES with more clarity and detail.

Once the ES has been submitted for planning permission the competent authority must review the proposed project. The competent authority, in this case the Swansea City Council, must then make the ES available to “authorities with environmental responsibilities, local and regional authorities and other interested organisations and the public for review. They are then given the opportunity to comment on the project and its environmental effects” (**EU guidance on EIA, 2001: 7**).

In **Figure 1** Pacifica and Ogola identify that public participation typically occurs at this stage and also during screening. The EIA for Mumbles lifeboat station contained a full list of consultees with three periods of formal consultation in 2003, 2007 and 2010. The first consultation period corresponded with the publication of the scoping report in 2003, the final consultation period was in 2010 with the month not verified.

Additional impact assessments could have been used in the Mumbles lifeboat station EIA. These “forms of impact assessment have developed as extensions or critiques of EIA. Social Impact Assessment (SIA) considers the likely social and cultural impacts of a proposed project, plan, policy, or program. Strategic Environmental Assessment (SEA) recognises the importance of decisions taken at the level above individual projects: that is, at policy, plan, and program levels” (**Cuff and Goudie,2009:221**). Ecological Impact Assessment (ECIA) is occasionally introduced to the EIA process especially in collecting baseline data. Although ECIA is not statutory but considered best practise when assessing impacts of the development on habitats, species and ecosystems during the EIA (**CIIEEM,2016:1**).

2. Supporting legislation

This section will discuss European and UK legislation, and relevant Welsh Government, Local Authority and Mumbles Council policies.

EIA's are governed by many Acts of legislation, and each EIA has its own unique legislative framework for example the EIA for the Swansea tidal lagoon development would be subject to different legislation to that of an EIA for Newport's M4 relief corridor.

On a European level the EU directive 85/337/EEC which established a legislative framework for EIA for European countries. This has now been amended multiple times in 1997,2011 and in 2014 to streamline the EIA process with directive 2014/52/EU currently in place (**Gov.uk,2014**). There is also the Habitats and Birds Directives that would apply to all EIA's which aims to protect “over 1.000 animal and plant species, as well as 200 habitat types” (**ac.europa.eu,2016**). This directive runs parallel to 85/337/EEC and would need to be looked at together in any EIA. At the time of submission, the Mumbles lifeboat station EIA would have to apply the 1997 directive on EIA 97/11/EC and the Habitats and Birds directives.

In 2014 EU directive 2014/52/EU replaced the previous directive on EIA and has been implemented on 15th of May 2017. Projects initiated before this date would be subject to previous directive 2011/92/EU (**Landmarkchambers.co.uk,2017**).

The new 2014 directive had two key aims:

1. to be implemented universally by all member states
2. to streamline the EIA process

The Directive introduces new environmental issues such as the use of natural resources, human populations and health. Key to the new directive are the requirements for post EIA monitoring and stronger implementation of mitigation measures. Stronger measures have also been introduced on public consultation, requiring the public to be informed electronically in addition to public notices, that electronic information should be accessible through at least a central portal or easily accessible points of access, and a time frame for public consultation after EIA is presented for planning as a minimum of 30 days (**2014/52/EU, 2013**).

From a UK perspective part 3 of the UK's Town and Country Planning Act 1990 directly transposed all European EIA legislation into UK law which has been amended multiple times in line with European law making (**Gov.uk,2014**). In addition to this UK Act the Mumbles lifeboat station EIA would be subject to Welsh Government policy and local authority policies.

The EIA for the Mumbles lifeboat station discusses relevant legislation. The Marine Works Regulations 2007 is identified due to the old and new lifeboat stations being located in a maritime environment. The requirements of the EIA include the Coast Protection Act, Merchant Shipping Act 1988, and the Planning (Listed Buildings and Conservation Areas) Act 1990. This was considered appropriate as the pier is a grade two listed under the Act and requires consent for "Listed building demolition, in whole or in part, and for any works of alteration or extension which would affect its character as a building of special architectural or historical interest" (**Planning (Listed Buildings and Conservation Areas) Act 1990**).

A UK Regulation that impacts on this EIA is the Conservation of Habitats and Species Regulations of 2010 which came into force 1st of April 2010 (**legislation.gov.uk,2010**). These Regulations aimed to transpose the EU nature directives into UK national law and although the Regulations were published in April 2010 this EIA would have been obligated to follow the 2010 framework.

Part of the requirements of these Regulations are to identify SSSI's (Sites of Special Scientific Interest) and SAC's (Special Areas of Conservation) within the proximity of the proposed project. The EIA identifies these protected areas effectively, for example "the proposed development is adjacent to a national SSSI; however, no international designation is found in its vicinity. The proposed development is situated at least 4km from the nearest terrestrial international designations, the Gower Ash Woods SAC and Limestone Coast of South west Wales SAC" (**Royal HaskoningDHV,2010:9**).

From a Welsh Government perspective, the 'Wales Spatial Plan 2008 – people, places, and futures' aims to promote sustainable development in terms of planning.

Mumbles lifeboat station is situated in Swansea Bay Sub-Region Area according to the EIA and therefore the project should consider social, economic and environmental dimensions of sustainability.

The Planning Policy for Wales 2010 was also addressed in the EIA, through the topic based Technical Advice Notes (TAN's) written for Welsh Assembly Government by technical specialists. The Mumbles lifeboat station EIA identifies TAN 5 - Nature and Conservation, TAN 12 - Design, TAN 14 - Coastal Planning and TAN 15 - Development and Flood Risk. The success of the Planning Policy for Wales would be measured in the Sustainable Development Goals set out in the United Nations 2030 agenda.

If the EIA for Mumbles lifeboat station was written today, it would have addressed the Well-being of Future Generations (Wales) Act 2015. Goal 6 of the Act states that Wales needs to develop "Attractive, viable, safe and well-connected communities" (**Gov.Wales, 2015**) The measurement goals set out by the Act apply to the tourism and recreation (**Pp189-196**) of the EIA.

At local authority level, three policies have been identified by the EIA as relevant. The first of which is the City and County of Swansea's Unitary Development Plan of 2008. Swansea Council states "The UDP is based firmly on sustainable planning principles. This is reflected in its spatial strategy and overall approach to the pattern, form and distribution of new development" (**Swansea.gov.uk,2014**). The Swansea Bay Strategy 2008 is an initiative developed by the Council, Welsh Government and other groups to improve the performance of Swansea waterfront (including lifeboat station) for its residents.

Lastly the Mumbles Pier and Foreshore Development Scheme has been identified which is a localised plan set out by the Mumbles Council to govern development along the Mumbles seafront.

Devuyst in 2000 argued for a hierarchal Impact Assessment System where "Policy-making and planning should start at the highest levels of government and be filled in by policies, plans, programmes and projects at lower and local levels" (**Devuyst, 2000:76**). This hierarchal system was clearly identified by Royal HaskoningDHV when preparing their ES for planning.

3. Review of the academic literature

An academic literature review was undertaken on the process of EIA, which identified English language worldwide publications less than 25 years old including peer reviewed journals, books, legislative changes, independent contractor reports, government websites, local authority planning websites and best practice guidance.

All identified publications were reviewed and assessed for their relevance to this report and not relevant publications were rejected. The selected papers were then classified into 5 topic areas:

- Effectiveness of EIA
- Evolution of EIA processes
- Stakeholder engagement and public participation
- Evaluation of broader human health impacts of EIA.
- EIA processes in developing in developing nations

3.1 Effectiveness of EIA

Sandham et al wrote “Since the advent of Environmental Impact Assessment (EIA) in the USA in 1970 and its subsequent adoption around the globe, its effectiveness has been a particular concern in the EIA research and practice community” (**Sandham et al,2013:155**).

Glasson’s book ‘An introduction to EIA’ highlighted the large quantities of published research examining effectiveness of EIA, and discussed wide ranging and comparative reviews of EIA systems in the academic literature (**Glasson,2005**).

Some literature reviewed was largely supportive of EIA’s effectiveness, for example Jay et al’s paper in 2007 “EIA has made a difference to patterns of development through design modifications, institutional learning, and stakeholder involvement. The quality of decisions involving EIA has improved as a result of the increased use of modification or mitigation, the use of more stringent conditions upon permissions and, occasionally, the non-implementation of potentially environmentally damaging proposals which might previously have been approved” (**Jay et al,2007:299**) In the same article Jay et al states that EIA is falling short of its full potential in consistent oversight and also that its influence on decision makers within the development process is limited because of conflicting political and economic agendas.

3.2 Evolution of EIA process

The evolution of the EIA’s process has been widely discussed within the literature. A good example of a long-term study into EIA’s evolution within the UK was undertaken by Thakur and Ficher in 2016. The authors undertook a S.W.O.T analysis complimented by a survey, a workshop conducted in Liverpool and a comprehensive literature review as their methodology. The study found through Glasson work that the EIA process systematically was not too technical in its delivery in the first 10 years, but through the workshop found that participants thought the EIA process was currently “suffering from technical obesity, with lengthy documents guiding the process from authorities” (**Thakur and Ficher, 2016:22**).

3.3 Stakeholder engagement and public participation

The extent of stakeholder engagement and public participation are also discussed in the literature. Johnson and Dagg wrote “for coastal developments the public need to appreciate legal, technical, scientific and multiple use related complexities. Population pressure in built up coastal areas is likely to mean that the numbers of stakeholders will be high” (**Johnson and Dagg, 2003:18**).

Engaging stakeholders through accurate scientific data about the impacts of individual developments would be effective in helping stakeholders make informed decisions (**Rozema and Bond, 2015**). They made a valid point however informed decision making can only be made if stakeholders understand the language and science of the ES.

4.4 Evaluation of broader human health impacts of EIA.

Bhatia and Wernham undertook a systematic review of the integration of human health impacts within the EIA process. They summarised “In practise, the consideration of health within EIA is both rare and narrowly focused on toxic exposures; a comprehensive and systematic approach to human health impacts in the EIA practise has not evolved” (**Bhatia and Wernham, 2008:999**).

4.5 EIA processes in developing nations

Other publications focused on decision making by authorities as part of the EIA process in developing nations. One study by Ayla Biglin examined the EIA process in Turkey. The author discovered “After final submission of EIA statements Turkish Ministry of Forestry and Environment made 3654 positive and just 31 negative decisions based on EIA reports between 1993 and 2014” (**Bilgin, 2015:41**). Even though the Turkish authorities had a high acceptance rate for ES statements, this does not automatically indicate how effective these EIA’s were in identifying and mitigating environmental impacts.

Another example by Clausen et al examined the EIA process in Vietnam. They found that in Vietnam, similar to many developing nations, a failure exists between theory and practise. Clausen et al identified a “lack of effective implementation – through lack of capacity or political will – rather than serious imperfections or shortcomings in the EIA process” (**Clausen et al, 2011:141**).

4. The Gaps between theory and practise

This section discusses the gap between the legislative Directives and what happened in practice within the Mumbles lifeboat station EIA. The findings are summarised in the table below.

Table 1: Summary of gaps between theory and practice

Method used	Legislation	The Mumbles lifeboat station EIA	Gap between theory and practice
1.Project team	EIA Directive 97/11/EC; European Habitats and Birds Directive Council Directive 92/43/EEC; Town and Country Planning Act 1990	No adequate description of individual team members was given.	Yes
2.Description of practical alternatives	EIA Directive 97/11/EC; European Habitats and Birds Directive Council Directive 92/43/EEC; Town and Country Planning Act 1990	A comprehensive description of alternatives was provided	No
3.Methodology and baseline data	EIA Directive 97/11/EC; European Habitats and Birds Directive Council Directive 92/43/EEC; Town and Country Planning Act 1990	Extensive collection of baseline data through survey, assessments and desk top studies.	No
4. Stakeholder engagement and public consultations	EIA Directive 97/11/EC; European Habitats and Birds Directive Council Directive 92/43/EEC; Town and Country Planning Act 1990	Minimal public consultation but good stakeholder engagement	Yes
5.Mitigation and impacts	EIA Directive 97/11/EC; European Habitats and Birds Directive Council Directive 92/43/EEC; Town and Country Planning Act 1990	Mitigation innervations were put in place but their effectiveness was not monitored.	Yes

6. Post project monitoring	EIA Directive 97/11/EC; European Habitats and Birds Directive Council Directive 92/43/EEC; Town and Country Planning Act 1990	Under legislative directives at the time there was no requirement for post project monitoring.	No
----------------------------	---	--	----

4.1 The project Team

Glasson identified that the project team should be “documented in a clear statement of the interdisciplinary team approach in the EIS. This would indicate the specific roles of team members, and their titles, qualifications and experience” (**Glasson,2005:93**).

The Mumbles Lifeboat station EIA describes its team as “Royal Haskoning have managed the EIA process and authored the majority of the Environmental Statement. Opus International Consultants (UK) Ltd has acted as the consulting engineers and has provided details of the design and proposed construction methods. In addition, The Environmental Dimension Partnership has undertaken the following specialist studies to inform the EIA:

1. Historic building assessment and Heritage Statement;
2. Breeding birds survey and impact assessment;
3. Landscape and visual impact assessment. (**Royal HaskoningDHV,2010:6**)

The ES didn’t offer a full description of its team members roles and qualifications and there is no evidence that the team were competent this creates a gap between the theory and practice.

4.2 Description of alternatives

Under European law the EIA would be required to provide alternative options for the project. “A range of alternatives were considered during the development. These included alternatives in lifeboat type, location, site, and design. The RNLI therefore decided that the best option to provide SAR services with an all-weather boat is to retain a slipway station at the Mumbles where there is a trained crew and proven launching characteristics” (**Royal HaskoningDHV, 2010:54**).

Alternative options were also considered for the refurbishment of the Mumbles pier. Originally a “do nothing” scenario was considered but was scrapped due to safety reasons including seating, flooring and pier head. The do-nothing scenario was not considered viable due to the piers “special interest features, its function as a popular tourism feature and its use alongside RNLI facilities” (**Royal HaskoningDHV, 2010:60**).

There was no gap found between theory and practice in the presentation of alternatives in the EIA.

4.3 Methodology and baseline data

Royal HaskoningDHV collected its primary baseline data through “bibliographic searching, consultation with the database of local information, discussion with local statutory bodies (e.g. CCS and Environment Agency on water quality), and stakeholder consultation” (**Royal HaskoningDHV,2010:15**). The comprehensive baseline data collection included a breeding bird impact assessment, an ornithological survey and a landscape and visual assessment amongst others. There was no observable gap between theory and practise.

4.4 Stakeholder involvement and public consultations

The stakeholder involvement was recorded in the EIA (**Royal HaskoningDHV,2010:46-53**). Certain parties supplied a lot of feedback e.g. the Mumbles Development Trust who wanted 6 actions to be taken by the developer. Whilst others contributed little e.g. the Maritime and Coastguard Agency.

The EIA dealt with its identified stakeholders in a good fashion, however falls short on public engagement. The public were informed of the project through a pamphlet that was supplied to all local houses, and only two oyster fishermen were consulted during the three phases of consultation. Shepard and Bowler argue that “citizen involvement is often reduced to a procedural exercise instead of a substantive process to include the public in environmental decision making” (**Shepard and Bowler,1997:725**), this statement would apply to this EIA. As the EIA falls short in public consultation there is a gap between theory and practice.

4.5 Mitigation and impacts

The EIA defined and classified the environmental impacts, but did not use scientific measurements. For example a minor beneficial impact is defined “of minor significance but has some environmental benefit” (**Royal HaskoningDHV,2010:5**).

The EIA acknowledges that marine mammals are sensitive to underwater noise, then identified two possible impacts through piling and vessels. There were no mitigation measures applied for vessels as few were used when transporting materials, for noise mitigation a marine mammal observer would be employed so that noisy activity during construction would be delayed if a marine mammal would be spotted. The report also acknowledges the harbour porpoise as one of the most common marine mammal’s due to a feeding habitat located off the Mumbles head.

The EIA also identified the impacts on birdlife. There is an extensive description of the types of birds that visit the Mumbles area and descriptions of breeding seasons for each species. The EIA identified Kittiwakes as a particular species of importance and

predicted a major adverse impact on the birds for a do-nothing scenario. “Mumbles Pier hosts a colony of kittiwakes, which are believed to have used the site since 1993. Data on the abundance and the location of the colony has been obtained from 1994 through to present day from counts provided by GOS” (**Royal HaskoningDHV, 2010:112**). In order to mitigate the impact of construction on the birds EDP (the specialist employed by the developer) decided to create a new nesting habitat on the existing lifeboat station away from the pier refurbishment works. Initially a trial was carried out in the 2011 season with plans to introduce the full colony if successful, the document doesn’t mention the outcome of this intervention. Translocation of habitat is considered less desirable than direct mitigation around the current habitat of nesting birds.

Intertidal and subtidal ecology was an area where significant impacts were identified (**Pp 78-94**). A native breed of oyster resides on the existing pier structure and would be directly affected by piling works. In order to mitigate the impacts the EIA suggested that the developer should use a paddock to minimise contact with the seabed, and marking the area to alert vessels of its location (**Royal Haskoning,2010**).

The following table has been created to summarise the total number of residual impacts per category.

Table 2: Number of residual impacts per category

IMPACT	NUMBER OF RESIDUAL IMPACTS
NEGLIGABLE	24
MINOR ADVERSE	6
MODERATE ADVERSE	0
MAJOR ADVERSE	0
MINOR BENEFICIAL	3
MODERATE BENEFICIAL	8
MAJOR BENEFICIAL	0

Source: Adapted from Royal Haskoning DHV (2010). RNLI Lifeboat station and Pier Refurbishment Mumbles, Environmental statement. City and County of Swansea, Pp 17-23

The majority of minor adverse impacts are in areas this report has already discussed. In addition, a minor adverse impact was estimated for the disruption on recreational fishing during the construction phase. There were also a significant number of non-

impacts identified in the chapter on physical processes (**Pp62-67**). The beneficial impacts were mainly distributed in the human impact categories such as tourism, heritage and visual character. There are no major beneficial impacts identified in the EIA which could indicate a non-partial or objective stance to impacts by the consultants.

There was a gap identified between the legislation and the practice because the EIA didn't monitor the effects of their proposed mitigating interventions.

4.6 Post project monitoring

Most significantly there is no mention of any post project auditing or monitoring in the ES. In October 2010, the legislative requirements of this report would have been under European Directive 97/11/EC (**Royal HaskoningDHV,2010**). This Directive required less stringent standards on monitoring. The most recent Directive 2014/52/EC states that "If projects do entail significant adverse effects on the environment, developers will be obliged to do the necessary to avoid, prevent or reduce such effects. These projects will need to be monitored using procedures determined by the Member States. Existing monitoring arrangements may be used to avoid duplication of monitoring and unnecessary costs" (**2014/52/EC, 2014**). Had the EIA for Mumbles lifeboat station been written post 1st April 2017 its monitoring structure would have been mandatory. Consequently, there was no gap between the existing theory and practice.

Anti-thesis

The Mumbles lifeboat station EIA complies with the legislation of the time, and had a few shortcomings particularly in the area of public participation and consultation.

A counter argument for using an EIA process as a useful assessment tool is that "EIA is undertaken too late in the project planning cycle resulting in EIA's that react to development proposals rather than anticipating them" (**Clausen et al,2011:137**). However, within the Mumbles lifeboat station EIA summary of its construction schedule showed "work will commence in spring 2012, with completion targeted for autumn 2014" (**Royal HaskoningDHV,2010:58**). Which meant the EIA was submitted in October 2010 which gave the developer plenty of time to address the findings of the ES.

Another criticism of the EIA procedure from Wright et al who state "EIA are now contracted out, often to the lowest bidder without due consideration of expertise. Others suffer from limited agency resources. Consequently, many EIAs have become insufficiently researched documents that draw heavily from previous EIA while being rushed to completion to meet deadlines or avoid delaying projects" (**Wright et**

al,2013:72). This is not relevant for the Mumbles lifeboat station EIA because of its extensive baseline data research, and its contractor (Royal HaskoningDHV) who are a reputable international consultancy with “6000 consultants, spread over 150 countries” (**Royal HaskoningDVH.com**).

It can be argued that there might be a biased relationship between the developer and consultancy with the consultancy occasionally not presenting a neutral view when presenting environmental impacts in the ES. This report found insufficient evidence of a biased relationship in the ES submitted to the Council, but does concede that there may be less visible biases not covered in the EIA.

Conclusion

“EIA's theoretical base has become increasingly diverse and sophisticated, but its practice varies widely in quality and rigor. A great deal of attention has been paid to its participatory aspects, but actual participation remains uneven in both quantity and quality” (**Glasson,2004:1**). Glasson summarises the key concern with the modern EIA's ability in engaging the public, although the new European Directive 2014/52/EU intends to improve public participation.

This report has examined EIA's process, legislative background, academic literature, and finally identified the gap between theory and practise in the chosen example. Based on the information provided within this report there are five recommendations which will improve future EIA's.

Recommendations

1. Contractors need to conduct more in-house baseline data collection and not rely on baseline data collected from localised EIA's.
2. Improve public participation by direct communication, by using techniques such as social media, public meetings and information events.
3. Use standardised scientific definitions and monitoring techniques of environmental impacts of proposed projects.
4. Introduce a post project environmental audit to be carried out independently of the developer and contractor as suggested by **Dipper et al,1998**.
5. Create strong enforcement procedures in post project monitoring within EIA, as legislated in Directive 2014/52/EU.

(Word count: 5498 words)

Bibliography

Books and Journals

Bhatia, R., Wernham, A., (2008). Integrating human health into environmental impact assessment: An unrealized opportunity for environmental health and justice. *Environmental Health Perspectives*, Vol 116, 991–1000.

Biglin, A., (2015). Analysis of the Environmental Impact Assessment (EIA) Directive and the EIA decision in Turkey. *Environmental Impact Assessment Review*, Vol 53, Pp 40–51.

Clausen, A., Hoang, H.V., Pedro, M., (2011). An evaluation of the environmental impact assessment system in Vietnam: The gap between theory and practice. *Environmental Impact Assessment Review*, Vol 31, Pp 136–143.

Cuff, D. and Goudie, A. (2009). The Oxford companion to global change. New York: Oxford University press, Pp 221.

DEVUYST, D., (2000). Linking impact assessment and sustainable development at the local level: the introduction of sustainability assessment systems. *Sustainable Development*, Vol 8(2), Pp 67.

Dipper, B., Jones, C., Wood, C., (1998). Monitoring and post-auditing in environmental impact assessment: a review. *Journal of Environmental Planning and Management*, Vol 41, Pp731–747.

Glasson, J., Thrive, R., and Chadwick, A., (2005) Introduction to Environmental Impact Assessment. 3rd ed. Abingdon: Routledge

Jay, S., Jones, C., Sinn, P., Wood, C., (2007). Environmental impact assessment: Retrospect and prospect. *Environmental Impact Assessment Review*, Vol 27, Pp 287–300.

Johan-Thakur, U., Fischer, T.B., (2016). 25 years of the UK EIA System: Strengths, weaknesses, opportunities and threats. *Environmental Impact Assessment Review*, Vol 61, Pp19-26.

Johnson, D.E., Dig, S., (2003). Achieving public participation in coastal zone environmental impact assessment. *Journal of Coastal Conservation*, Vol 9, Pp 13–18.

Pacifica F. Aching Goole, (2011). Environmental impact assessment general procedures. *Environmental Monitoring and Assessment*, Vol 1, Pp 423–497.

Rosemary, J.G., Bond, A.J., (2015). Framing effectiveness in impact assessment: Discourse accommodation in controversial infrastructure development. *Environmental Impact Assessment Review*, Vol 50, Pp 66–73.

Sand ham, L.A., van Eerden, A.J., Jones, C.E., Retief, F.P., Morrison-Saunders, A.N., (2013). Does enhanced regulation improve EIA report quality? Lessons from South Africa. *Environmental Impact Assessment Review*, Vol 38, Pp155–162.

Shepherd, A., Bowler, C., (1997). Beyond the requirements: Improving public participation in EIA. *Journal of Environmental Planning and Management*, Vol 40, Pp 725–738.

Weston, J., (2000). EIA, Decision-making theory and screening and scoping in UK practice. *Journal of Environmental Planning and Management*, Vol 43, Pp 185–203.

Wright, A.J., Dolman, S.J., Jasmyrn, M., Parsons, E.C.M., Schiedam, D., Young, S.B., (2013). Myth and Momentum: A Critique of Environmental Impact Assessments. *Journal of Environmental Protection*, Vol 4, Pp72–77.

Websites

City and County of Swansea Council website (2014) Unitary development Plan (UDP). [online] Available from <https://www.swansea.gov.uk/udp> [accessed 31 January 2018].

City and County of Swansea planning application website (2018), Planning application search. [online] Available from <https://property.swansea.gov.uk/online-applications/> [accessed 2 February 2018].

EU Guidance on EIA (2001), Guidance on EIA, EIS review. [online] Available from <http://ec.europa.eu/environment/archives/eia/eia-guidelines/g-review-full-text.pdf> [accessed 16 January 2018].

EU Guidance on EIA scoping (2001), Guidance on EIA scoping. [online] Available from <http://ec.europa.eu/environment/archives/eia/eia-guidelines/g-scoping-full-text.pdf> [accessed 16 January 2018].

EU Guidance on EIA screening (2001), EU Guidance on screening. [online] Available from <http://ec.europa.eu/environment/archives/eia/eia-guidelines/g-screening-full-text.pdf> [accessed 20 January 2018].

European commission website (2016), The Habitats Directive [online]. Available from http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [accessed 2 February 2018].

European commission website (2017), Environmental impact assessment- EIA [online]. Available from <http://ec.europa.eu/environment/eia/eialegalcontext.htm> [accessed 31 January 2018].

Iema.net website (2010), Non–Technical summary of Mumbles Lifeboat EIA. Available from https://www.iema.net/assets/nts/Royal_HaskoningDHV/RNLI_The_Mumbles_NTS_Oct_2010.pdf [accessed 29 January 2018].

Royal Harkening DHV website (2018), Enhancing society together. [online] Available from <https://www.royalhaskoningdhv.com/en/united-kingdom>. [accessed 21 January 2018].

UK Government legislation (2010), The Conservation of Habitats and Species Regulations 2010. [online] Available from http://www.legislation.gov.uk/ukxi/2010/490/pdfs/ukxi_20100490_en.pdf. [accessed 4 February 2018].

UK Government website (2014), Environmental impact assessment Explains requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. [online] Available from <https://www.gov.uk/guidance/environmental-impact-assessment> [accessed 6 February 2018].

Publications and documents

Fisher, T (2017). EIA legislative changes: the revised Directive and the new regulations (and new thresholds). Landmark Chambers, Pp 1-22. [online] Available from <http://www.landmarkchambers.co.uk/userfiles/TF.pdf> [accessed 10 February 2018].

Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, freshwater and coastal. Second Ed. (2016). Chartered Institute of Ecology and Environmental Management, Pp 1-49. [online] available from https://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf [accessed 3 February 2018].

Royal HarkeningDHV (2010). RNLI Lifeboat station and Pier Refurbishment Mumbles, Environmental Statement. City and County of Swansea, Pp 1-207.

The European Commission (1997). Directive 97/11/EC: Amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. The European Parliament and the Council of the European Union, Pp 1-11. [online] Available from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31997L0011&from=EN> [accessed 7 February 2018].

The European Commission (2014). Directive 2014/52/EU: Amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. The European Parliament and the Council of the European Union, Pp 1-18. [online] Available from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0052&from=en> [accessed 16 February 2018].

Welsh Government guidelines on Well-being of Future Generations (Wales) Act 2015. Cardiff: Department for Natural Resources Wales, Pp 1-12. [online] Available from <http://gov.wales/docs/dsllg/publications/150623-guide-to-the-fg-act-en.pdf> [accessed 1 February 2018].

Images



Image A: Mumbles lifeboat station and pier development, taken from the Mumbles head on 10th January 2018.



Image B: New Mumbles lifeboat station taken on 10th January 2018.