Strategic Environmental Assessment:

Local Authority Preparedness in Ireland

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Abstract

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The recent transposition of the Directive 2001/42 on the assessment of the effects of certain plans and programmes on the environment has intensified the interest in Strategic Environmental Assessment (SEA) performance in Ireland. This dissertation studies the relationship between Irish local authorities and the SEA process and, in particular, attempts to ascertain performance gaps in relevant competencies required of Local Authority forward planners.

Two surveys were employed; one replicated, in the Irish context, a recent study inquiring into UK local Authority readiness to meet the requirements of the directive at a general level. This inquiry was then enhanced through a second more detailed survey of opinions of Irish LA forward planners on a presented set of thirty-three (33) SEA competencies with regard to:

1. The perceived level of importance the competency has to SEA quality
2. The perceived level of current preparation for same

Arising from an EPA report concerning an Irish Methodology for SEA, these SEA tasks were considered relevant and comprehensive. Descriptive and inferential statistics were employed to summarise, rank and make probability judgements on the data set.

Findings indicate that local authorities consider that they have achieved a moderate level of staff awareness for the requirements of the Directive; however, little to no progress in providing for the requirements of the Directive is indicated in terms of resource identification/allocation, information provision, information use, and in addressing those SEA aspects not covered in traditional EIA.

Dedication

The author dedicates this study to his beloved wife Maria and beloved children: Jamie, Christopher, Matthew, Isaac, and Aine.

It is also dedicated to his father Eugene, mother Mariette, and his wonderful brothers and sisters – thank you.

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The completion of a study like this is not a singular activity and involves the support and cooperation of many. The author would like to thank the following:

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CHAPTER ONE

INTRODUCTION

Chapter 1

INTRODUCTION

This chapter introduces the dissertation, summarizes the key findings, and provides an organising framework for the four chapters that follow.

1.1 RESEARCH FOCUS

This dissertation studies the relationship between Irish local authorities and the SEA process. It asks the questions, "Are Irish Local Authorities ready for the requirements of the SEA Directive?" and "Where are the skill gaps that must be addressed to ensure the quality of SEA activities in Irish Local Authorities?" To answer these questions, the study surveys the readiness status for the requirements of the Directive and then focuses on the attitudes of forward planners to a set of thirty-three (33) presented SEA competencies and establishes their opinions as to:

- The relative importance of the competencies to a quality SEA, and,

- Their current level of preparedness to perform the SEA task

The collated and analysed opinions inform as to the efficacy of current Local Authority SEA performance and the gaps that need addressing in future SEA capacity building in Ireland.

Apart from the broad picture of current status and training needs, the study identifies larger-than-chance differences in competency scorings based on the extent to which the forward planners have been exposed to training/information concerning SEA (for example, exposure to the guidance document from the Department of the Environment).

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1.2 MOTIVATION FOR THESIS

This researcher first became acquainted with the SEA Directive as part of his studies at Institute of Technology Sligo. The topic sparked an interest. This resulting study produces information/data that is useful in the current context of SEA in Ireland. Knowledge about Local Authority's relationship to the SEA Directive is important; i.e. it has the potential to be relevant, timely, interpretable and coherent.

1.2.1 Relevance – is this study concerned with useful topics?

This study is relevant for the following reasons:

- ***The SEA Process is a major tool in the achievement of Sustainable Development and Environmental Protection.***

  Emilsson et al (2004) point out that, today, there are many environmental management tools available to support integration of environmental perspectives in decision-making processes. Noble (2003) identifies "strategic environmental assessment gaining widespread recognition as a tool for integrating environmental considerations in policy, plan and program development". The EPA's "Ireland's Environment 2004" Report highlight SEA as "a key vehicle" in the integration of environmental issues into the decision-making process.

- ***Compliance with the SEA Directive is a legal necessity.***

  With transposition of the Directive in July 2004, plans and programmes in preparation now have to conform to its requirements.

- ***The Local Authority is a vital part of Irish SEA and as environmental assessment becomes increasingly more high level, protagonists may not be trained/educated appropriately to meet the ensuing challenges***

  There are a range of stakeholders of SEA in Ireland. Scott & Marsden (2003) identify those who will be responsible for undertaking SEA in Ireland to include persons within local authorities and state agencies and private environmental consultants. This study focuses on the local

authorities. In a recent study, James & McCall (2003) found that, for the UK, local authorities were the least prepared of all sectors for the implementation of the SEA Directive.

1.2.2 Timeliness – Is this study producing data at the right time?

- **There is a current identified need for capacity building**

  The Department of the Environment, Heritage, and Local Government (DOEHLG) SEA Guidelines (2004) note that "Implementation of the SEA Directive will … face the plan-making process with new challenges. Planners will need to develop new skills in order to describe, evaluate and monitor the likely significant environmental effects of plans, and thus build on the skills already developed in terms of environmental assessment at project level". This concern is echoed in Scott & Marsden (2003) which points out that "the successful implementation of the SEA Directive, which takes effect from July 2004, will rely on 'practitioners' of SEA being able to apply best-practice techniques within an overall SEA methodology that both allows compliance with the Directive's requirements and fulfills its overall purpose of contributing to sustainable development".

  EPA "Ireland's Environment 2004" report identifies "better integration of environmental and natural resource considerations into the policies, plans and actions of economic sectors" as on of the major environmental protection challenges currently facing Ireland".

  IEMA (2003) write that "the main obstacle to effective practice is the lack of experience and capacity amongst practitioners in conducting SEA"

- **Ireland is now one year on from transposition of the Directive**

  The legal necessity for SEA performance is now in force; the implementation of Directive 2001/42/EC took effect in July of last year. Strategic environmental assessment is a relatively new requirement in the

Irish planning system and hence, current information on status and capacity for local authority SEA is timely.

- **The DOEHLG themselves have recently held seminars on SEA for local government officials.**

  In May and November of last year the DOEHLG held seminars to introduce local government officials to the Directive. Speaker's included one of the authors (Paul Scott) of the EPA funded report from which the SEA tasks for the second survey were developed. Also presenting was Emma James of the IEMA who prosecuted the UK survey into local authority readiness for the requirements of the Directive, replicated as the first survey in this study.

- **2006: First Report on the Application and Effectiveness of the SEA Directive**

  Article twelve of the SEA Directive states that before twenty-first July 2006 "the Commission shall send a first report on the application and effectiveness of this Directive to the European Parliament and to the Council". This study provides a timely statement of the current situation for Irish local authorities one year prior to such a report.

1.2.3 Interpretability – Is there supplementary information and metadata available to interpret and utilise the generated data?

Scott & Marsden (2003) provides a SEA methodology for plans and programmes in Ireland; this Environmental Protection Agency funded report can act as a context within which to explore issues relating to the SEA capacity of Irish local authorities.

1.2.4 Coherency – Can this study be successfully brought together with other studies?

The Institute of Environmental Management & Assessment (IEMA) has already conducted a survey of UK local authority's readiness to meet the requirements of the SEA Directive. The first part of this research replicates this IEMA 2003 study

and hence results from each can be usefully related. The second study has not, to the best knowledge of the author, been performed elsewhere, as yet.

Given all the above, the author considers that knowledge about Local Authority's relationship to the SEA Directive is relevant, timely, interpretable and coherent.

1.3 RESEARCH QUESTIONS

Table 1.1 conveys a summary of the research.

This study aims to inform the debate on the future quality of Irish environmental assessment at the strategic level.

First, the readiness of local authorities to meet the requirements of the directive is established through the replication of a recent survey by the Institute of Environmental Management & Assessment (IEMA) of UK local authorities in an Irish context.

Second, a finer analysis of the issue is attempted: attitudes of local authority strategic planners to a set of thirty-three (33) SEA performance/quality competencies are explored: How important are they and what ranking order exists for them? To what extent are they prepared to perform the SEA competencies, and where do they consider this preparedness to be lacking? How these attitudes depend, if at all, on the extent of exposure to training/information concerning SEA is then explored.

1.4 ORGANISATION OF THE DISSERATION

Following on from this introduction, the relevant literature is explored. This substantiates the issues and provides a methodology for the examination of the issues. Chapter three presents the methods employed for data design, collection and analysis. Chapter four presents the results of the data collection and analysis, while chapter five concludes the dissertation.

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Table 1.1 Summary of Thesis

Key Research Questions	1 Survey One: What is the current state of readiness in the local authorities for the prosecution of the SEA Directive? 2 Survey Two: What is the view of L.A. strategic planners as to: The importance of a given set of SEA tasks Their current state of preparedness to carry out those SEA tasks Have the information/training interventions by the DOEHLG to date succeeded in improving local authority SEA practitioner's level of competency?
Research Setting	Irish Land-Use Planning System/Sector
Units of Analysis	1. Survey One: Study Population = Sample Population: Irish local authorities 2. Survey Two: Study Population = Sample Population: Irish local authority strategic/forward planners
Research Strategy	Cross-sectional Sample Surveys
Type of Research	Descriptive and Normative
Availability of Data	New Data Collection
Type of Information	Quantitative
Sampling Method	Probability Sampling (Classical Variable Sampling)
Key Findings	LA Strategic Planners consider that they have achieved only moderate progress in making staff aware of SEA requirements. There is little to no progress in identifying/allocating resources for SEA implementation, providing/using SEA information, and addressing those SEA aspects not covered in traditional EIA. All but one of the SEA tasks from the 'Scott & Marsden' report are of 'considerable importance' in the opinion of the forward planners; the remaining task is of 'moderate importance'. Local authority forward planners only consider themselves considerably prepared for one SEA task: 'Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive'. 16 of the remaining tasks, which include all but one of the consultation competencies, are then held to be moderately prepared for, whilst the remaining 16 have had little to no preparation. Training/information interventions to date by Government agencies have had little effect in terms of forward planners' views of the importance or preparedness for the presented 33 SEA Tasks.

CHAPTER TWO

LITERATURE REVIEW

Chapter 2

LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this review is to set the scene for the examination of the current readiness of Irish Local Authorities to meet the requirements of the SEA Directive. The review ultimately addresses the issues from an Irish perspective and seeks to form a basis for developing SEA capacity in the Irish planning system. First the concept of environmental assessment at the strategic level is explored; this leads to the more specialised SEA form that is represented in the EU SEA Directive. The Irish transposition of the SEA Directive (Directive 2001/42/EC) and its Irish context is reviewed and methodologies are developed to achieve the research objectives. Ultimately a competency-based approach is taken to identify SEA capacity gaps in the local authorities; such a 'gap analysis' can form the foundation for the development of training/educational interventions to realise SEA capacity in the Irish planning system.

2.2 THE NATURE OF STRATEGIC ENVIRONMENTAL ASSESSMENT

2.2.1 What is strategic environmental assessment?

A Strategic Environmental Assessment (SEA) process involves a holistic approach that considers the projected environmental impacts over time of multiple actions within a region or ecosystem. These environmental impacts are broad in nature, ranging from flora/fauna to architectural impacts. In contrast to Environmental Impact Assessment (EIA), the SEA process provides decision-makers with information, strategies and actual and projected information on environmental effects on a large scale. SEAs' wider frame enables policy/plan/programme-makers to anticipate effects that site-specific studies do not capture.

According to Therivel, et al, (1992) SEA is the "The formalized, systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or programme and its alternatives, including the preparation of a written report on the findings of that evaluation, and using the findings in publicly accountable decision-making". This definition describes SEA with reference to an EIA procedure and refers to accountable decision-making.

In contrast, Sadler & Verheem (1996) define SEA without reference to an EIA procedure, writing that SEA is "A systematic process for evaluating the environmental consequences of proposed policy, plan or programme initiatives in order to ensure they are fully included and appropriately addressed at the earliest appropriate stage of decision-making on par with economic and social considerations". Their definition introduces a new element concerning inclusion of environmental consequences on par and simultaneously with economic and social factors.

Partidario (1999) defines the term as "A systematic, on-going process for evaluating, at the earliest appropriate stage of publicly accountable decision-making, the environmental quality and consequences of alternative visions and development intentions incorporated in policy, planning or programme initiatives, ensuring full integration of relevant biophysical, economic, social and political considerations". As in Therivel's definition, there is mention of 'accountable decision making', and similar to Sadler & Verheem's 1996 definition, it includes the notion of SEA taking place "at the earliest appropriate stage of decision making"; this definition stresses the importance of integration of environmental, social and economic factors.

Holistic understanding of environmental and social factors, and the expansion of the policy focus beyond the immediate concerns, differentiate Brown and Therivel's (2000) introduction of SEA as "A process directed at providing the authority responsible for policy development (the "proponent" during policy formulation) and the decision-maker (at the point of policy approval) with a holistic understanding of the environmental and social implications of the policy proposal, expanding the focus well beyond the issues that were the original driving force for new policy".

Sadler(2001) specifies a duty of care for the environment and the delivery of environmental protection and sustainable development objectives and policies in his description of SEA as "A process to systematically analyze and document the environmental effects and consequences of proposed strategic actions (e.g. policy, plan, programme, legislation) and alternatives, including measures to mitigate significant adverse environmental effects and enhance positive aspects, and ensure that the relevant findings are taken into account as an integral part of decision-making, consistent with a duty of care for the environment and with specific reference to the objectives, principles and policies for environmental protection and sustainable development that apply within the jurisdiction concerned".

Dalal-Clayton & Sadler (2005) draw attention to Mercier's statement of the view of the World Bank (2004) that sees SEA as "A participatory approach for up streaming environmental and social issues to influence development planning, decision-making and implementation processes at the strategic level"

2.2.2 SEA is not EIA - How SEA relates to EIA

SEA and EIA are two complementary tools to help mainstream sustainability into development strategies. In particular, it is important to note that:

- SEA is more than EIA applied to policies, plans and programmes.
- SEA & EIA apply to two sets of different objects (policies, plans, and programmes versus specific projects)
- SEA involves a greater variety of skills
- SEA involves a greater variety of institutions than EIA

Table 2.1, reproduced from UNEP (2002), identifies some comparisons between EIA and SEA

Table 2.1: Some comparisons between EIA and SEA (UNEP, 2002)

EIA of project	SEA of policy, plans and programmes
Takes place at the end of the decision-making cycle	Takes place at earlier stages of decision-making cycle
Reactive approach to development process	Pro-active approach to development proposals
Identifies specific impacts on the environment	Also identifies environmental implications, issues of sustainable development
Considers a limited number of feasible alternatives	Considers a broad range of potential alternatives
Limited review of cumulative effects	Early warning of cumulative effects
Emphasis on mitigating and minimising impacts	Emphasis on meeting environmental objectives, maintaining natural systems
Narrow perspective, high level of details	Broad perspective, lower level of detail to provide vision and overall framework
Well-defined process, clear beginning and enc	Multistage process, overlapping components, policy level is continuing, iterative
Focuses on standard agenda, treats symptoms of environmental deterioration	Focuses on sustainability agenda, gets at sources of environmental deterioration

2.2.3 Why SEA?

Sadler & Dalal-Clayton (2005) have recently collated and summarised the range of benefits of an SEA process as being:

1. promoting integrated environmental and development decision-making (i.e. promoting sustainability in decision-making)
2. facilitating the design of environmentally-sustainable policies and plans
3. providing for the consideration of a larger range of alternatives than is normally possible in project environmental assessment
4. taking account, where possible, of cumulative effects (particularly by focusing on the consequences of sectoral or regional-level developments) and global change
5. enhancing institutional efficiency (particularly where EIA related skills, operational funds and institutional capacities are limited) by obviating the need for unnecessary project-level EIAs

6. increasing the influence of certain ministries and increasing coordination across sectors
7. strengthening and streamlining project environmental assessment by:
    a. the incorporation of environmental goals and principles into policies, plans and programmes that shape individual projects
    b. prior identification of impacts and information requirements
    c. clearance of strategic issues and information requirements
    d. reducing time and effort taken to conduct reviews

2.2.4 Drivers for SEA?

The roots of strategic environment assessment are clearly addressed in Partidario (2004); SEA originated together with environmental impact assessment when it was conceived in 1969 with NEPA in the United States. NEPA outlined requirements for the application of environmental impact assessment to other levels above the project level; however such higher level assessments did not evolve to the same extent as project EIA, and experience developed mainly in the prosecution of project EIA.

Such employment of EIA leads to a different number of motivations for the enacting of environmental impact assessment to the levels of policy, plans and programmes (i.e. at the strategic level):

1. **The timing of decisions:** When project EIA was being applied, it was sometimes too late because a number of issues had already been decided before the application of the project EIA; another instrument needed to be used.

2. **The nature of decisions:** Policies, programmes and plans are normally considered at the strategic level of decision-making; this implies continuity in terms of decision-making which is essentially different from the project type of actions to which EIA is normally applied.

3. **The level of information**: When dealing with policies, programmes and plans, there is not the same detail of information that exists for

projects; another instrument, the SEA instrument, is required to be able to work with information that is much broader, much more vague and uncertain than EIA information at the project level.

2.2.5 Characteristics of Environmental Assessment at the Strategic Level

With the stated purpose of promoting "the effective practice of environmental impact assessment consistent with the institutional and process arrangements that are in force in different countries" the premier organisation in the environmental assessment field, the Internation Association for Impact Assessment (IAIA), developed and provided the key principles or characteristics of an ideal SEA (IAIA 2000); these principles/characteristics are reproduced below in Table 2.2:

Sadler & Dalal-Clayton (2005) stress the fact that "SEA is a decision-aiding tool rather than a decision-making process".

Table 2.2: Key Principles/Characteristics of SEA.

Purposive - the process should inform decision making and result in appropriate levels of environmental protection and community well-being.	***Participative*** - the process should provide appropriate opportunities to inform and involve the interested and affected publics, and their inputs and concerns should be addressed explicitly in the documentation and decision making.
Rigorous - the process should apply "best practicable" science, employing methodologies and techniques appropriate to address the problems being investigated.	***Interdisciplinary*** - the process should ensure that the appropriate techniques and experts in the relevant bio-physical and socio-economic disciplines are employed, including use of traditional knowledge as relevant.
Practical - the process should result in information and outputs which assist with problem solving and are acceptable to and able to be implemented by proponents.	***Credible*** - the process should be carried out with professionalism, rigor, fairness, objectivity, impartiality and balance, and be subject to independent checks and verification.
Relevant - the process should provide sufficient, reliable and usable information for development planning and decision making	***Integrated*** - the process should address the interrelationships of social, economic and biophysical aspects.
Cost-effective - the process should achieve the objectives of EIA within the limits of available information, time, resources and methodology.	***Transparent*** - the process should have clear, easily understood requirements for EIA content; ensure public access to information; identify the factors that are to be taken into account in decision making; and acknowledge limitations and difficulties.
Efficient - the process should impose the minimum cost burdens in terms of time and finance on proponents and participants consistent with meeting accepted requirements and objectives of EIA.	***Systematic*** - the process should result in full consideration of all relevant information on the affected environment, of proposed alternatives and their impacts, and of the measures necessary to monitor and investigate residual effects.
Focused - the process should concentrate on significant environmental effects and key issues; i.e., the matters that need to be taken into account in making decisions.	
Adaptive - the process should be adjusted to the realities, issues and circumstances of the proposals under review without compromising the integrity of the process, and be iterative, incorporating lessons learned throughout the proposal's life cycle	

2.2.6 SEA Performance – How is SEA to be prosecuted?

Noble (2003), identifying that SEA is gaining widespread recognition as a tool for integrating environmental considerations in policy, plan and program development, cites Bonde and Cherp (2000) that while SEA systems are advancing and new practices are emerging, very little has changed, with uneven and often unsatisfactory quality SEA performance. This point is taken up and explored fully in Sadler & Dalal-Clayton (2005) where the various approaches to

SEA are categorised into four broad families as are explained in Table 2.3 and Figure 2.1.:

1. Formal SEA
2. Near-Equivalent
3. Integrated SEA
4. Para SEA

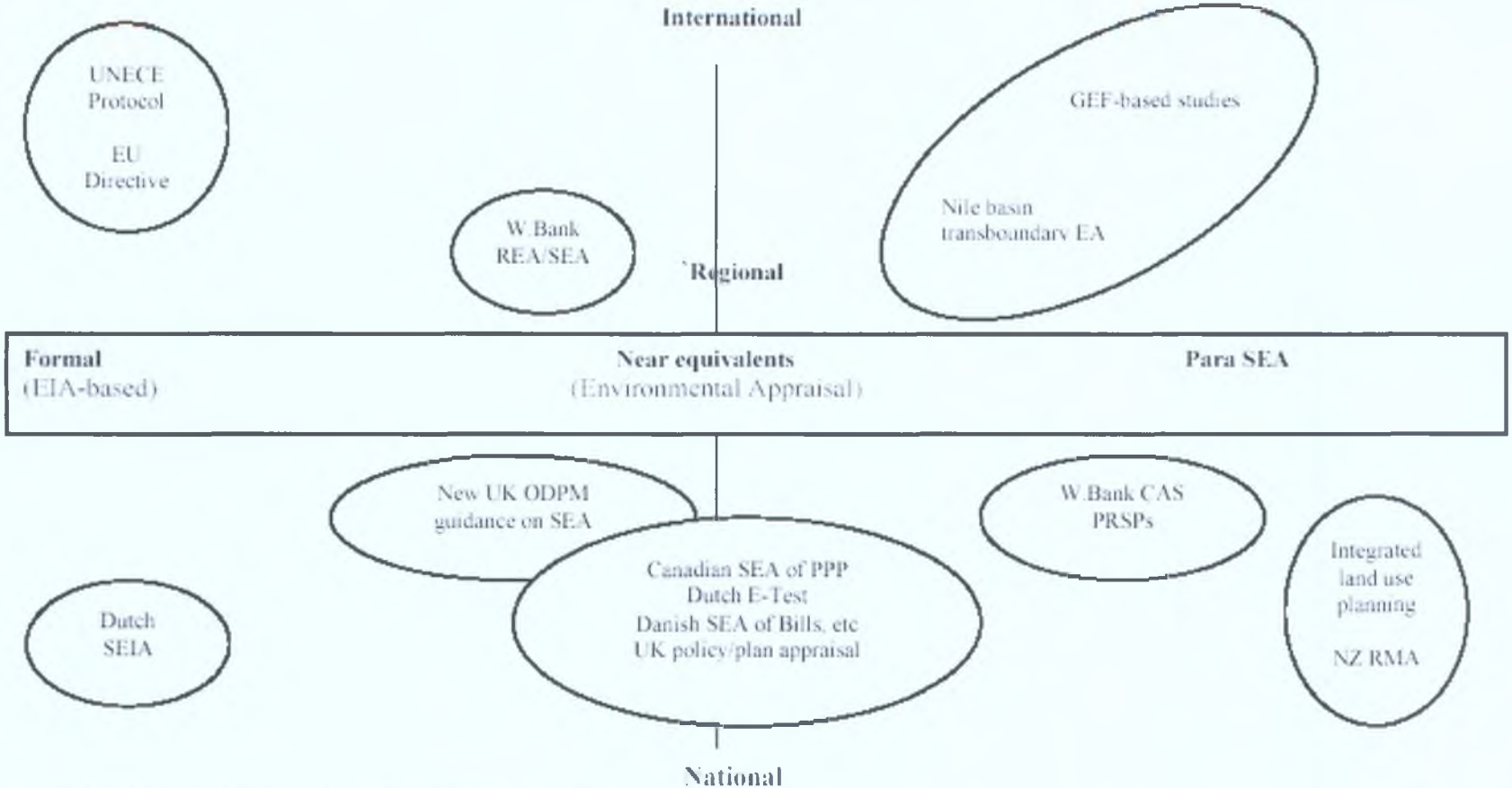
Dalal-Clayton and Sadler (1998) state that an SEA process should ensure that:

- Responsible agencies carry out an appropriate assessment of all strategic decisions with significant environmental consequences (Screening)
- Results of the assessment are available sufficiently early (timing)
- All relevant information is provided to judge whether an initiative should proceed and that objectives could be achieved in a more environmentally friendly way (environmental scoping)
- Sufficient information is available on other factors, including socio-economic considerations, either parallel or integrated in the assessment
- The quality of the process/information is safeguarded by effective review
- Sufficient information on the views of all legitimate stakeholders (including the public affected) is available early enough to be used effectively in the preparation of the strategic decision (participation)
- Results are identifiable, understandable and available to all parties affected by the decision (documentation)
- It is clear to all stakeholders and parties affected how the results were taken into account in decision-making (decision making and accountability)
- Sufficient information on the actual impacts of implementing the decision is gained to judge whether the decision should be amended (post-decision)

Table 2.3 Models/approaches to SEA (Sadler & Dalal-Clayton 2005)

Institutional model or procedural approach	Description
Formal	
EIA-based	SEA is modelled closely on or applied under and in accordance with the requirements of EIA legislation(e.g. USA, EU SEA Directive)
EIA-modified	SEA is carried out as a separate or parallel process to EIA, often as an administrative procedure with modified elements and characteristics (e.g. Canada & Denmark)
Dual or two-track systems	Examples include • The Dutch E-test of regulations and SEA of plans and programmes, previously as specified under the EIA Decree and now being aligned with the EU SEA Directive • Finnish EIA-based process for policies, plans and programmes and SEA of Bills and other government proposals
Near-equivalent	
Environmental Appraisal	SEA is not applied formally but is covered by near-equivalent overall process of environmental appraisal of policy or plans (e.g. in the UK, this approach is being phased, respectively, into integrated policy appraisal at the central government level, and into SEA of plans and programmes at the local authority level in accordance with the EU SEA Directive.
Regional Assessment	SEA applied to regional or sector development strategies for a particular geographic area (e.g. in Austria under the Regional Forests Policy, and recently introduced in Canada under the reforms to the Environmental Assessment Act.)
Sustainability Appraisal	SEA Elements are part of or linked to integrated assessment of the environmental, economic and social effects of resource policy or regional plans (e.g. assessments carried out by the former Resource Assessment Commission, Australia and for UK regional plans as described below).
Integrated	
Procedural Integration	No separate SEA procedure, this function is integrated into policy or planning process (e.g. in New Zealand Resource management act)
Substantive Integration	No separate SEA procedure, this function is replaced by integrated assessment (e.g. EC impact assessment for policy making, and as carried out by former Australian Resource Assessment Commission).
Integrated assessment and planning	No separate SEA procedure, this function is replaced by a system that is procedural and substantially integrated, i.e. Integrated assessment is structurally integrated into the planning system (e.g. UK regional planning system)
Para SEA	
Elements of SEA	Approaches or procedures that have some but not all of the features or characteristics of SEA and have the same overall purpose. Examples include a variety of progressive land use planning approaches and assessments undertaken within sustainability-based development strategy processes.

Figure 2.1 : Typology of sea approaches



Formal prescribed in international or national EIA-type instruments
Near equivalent processes of environmental appraisal of policies/laws, and broader SEA-type processes/methods
Para SEA Don't meet formal specifications or strict definitions, but share some characteristics or elements and have same overall purpose

2.3 THE EU SEA DIRECTIVE

As defined in the Directive, SEA is a set of procedures relating to the provision of information, consultation, and preparation of an environmental report and taking its findings into account in planning decisions. Article 1 of the SEA Directive states:

"The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment."

Explicitly excluded from the legal force of the SEA Directive are plans or programmes related to national defence, civil emergency, budgetary and financial matters.

On 5th June 2001, the European Parliament and Council adopted the SEA Directive, ending 20 years of political debate within the Commission; it had to be implemented into Member State's legal systems by July 2004. To date, Enterprise Ireland (2005) report that "legal compliance remains low" with only "eleven out of the 25 Member States claim to have transposed, compared to nine last July". Progress on the ground appears to be running ahead of legal transposition, although this is "very difficult to measure". Countries are defining methodology and finalising lists of sectors that will need SEA.

Key stages in the SEA process are defined:

1. *Screening – which plans require SEA*

   "Screening" is the process for deciding whether a particular plan, other than those for which SEA is mandatory, would be likely to have significant environmental effects, and would thus warrant SEA.

The screening rules of the Directive are complex and challenging to interpret; this has led to uncertainty among plan-makers and environmental authorities as to which plans will require SEA and the impact on future workloads.

The rules apply to plans for which preparation started after 20 July 2004 (or if started earlier) where the plan will be adopted after 21st July 2006. The copy of the Directive in Appendix 4 of this thesis contains the rules that determine for which plans or programmes an environmental assessment must be prosecuted. The fundamental issue determining if an environmental assessment at a strategic level is to be performed is whether the plan or programme would likely have significant effects on the environment.

2. *Scoping – focusing resources on the issues that matter*

"Scoping" is the procedure whereby the range of environmental issues and the level of detail to be included in the Environmental Report are decided upon, in consultation with the prescribed environmental authorities.

The Directive contains an annex which sets out the assessment requirements which planners must interpret in consultation with the environmental authorities; their advice must be provided within 5 weeks, but it need not be adhered to.

An Environmental Report must be prepared which sets out the plan's objectives and its relationship to any relevant environmental policies and issues. The report requires a baseline study in addition to an assessment of likely significant environmental effects of implementing the plan and its reasonable alternatives. Thirteen categories of environmental effect (e.g. flora, landscape) are specifically identified in the Directive.

3. *Consultation*

The planners are required to send the draft plan and the "environmental report" to the designated environmental authorities and to inform the "public consultees" (NGOs and others identified by the plan-makers as affected parties) of the availability of these documents.

A time-period is allowed to allow for the expression of opinions by both these public consultees and the environmental authorities.

Despite the fact that the Directive requires the draft plan and the environmental report to be available for inspection by the wider public, this need not be publicised.

If a plan is likely to affect the environment in another Member State of the EU, then the draft plan and the environmental report must be forwarded to that State to allow for consideration before adoption of the proposed plan. This transboundary aspect includes European Commission arbitration if disagreements arise among the Member States.

4. *Information as to Decision*

The consultation period will allow for the creation of opinions and the Directive requires that these opinions, along with the findings of the environmental report, must be taken into account before finalising the plan. Once the proposed plan has been adopted, the plan-maker must inform as to the availability of the final plan and its environmental report. There must be a statement of how environmental considerations, the environmental report, and the consultees' opinions have been taken into account; also, information must be provided as to why the chosen plan was selected over the identified alternatives, and as to the monitoring arrangements on the environmental effects of plan implementation.

5. *Monitoring*

   Unlike environmental impact assessment, monitoring must be performed; this will be a major task for planners.

2.4 STRATEGIC ENVIRONMENTAL ASSESSMENT IN IRELAND

2.4.1 Introduction

The EPA in it's third State of the Environmental Report (2004) note that:

"Although under increasing pressure, Ireland's environment remains of generally good quality. Awareness and vigilance are needed if this asset if to be protected".

The report identifies two general environmental protection challenges, the first of which is "better integration of environmental and natural resource considerations into the policies, plans and actions of economic sectors"

However, it notes that Ireland has "a long way to go to achieve an appropriate level of integration of environmental and natural resource considerations into key policy areas". It also highlights the SEA Directive as a key vehicle of such integration.

2.4.2 Transposition of Directive 2001/42/EC

SI No. 435 of 2004 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations, 2004. transposed Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (the Strategic Environmental Assessment ("SEA") Directive) into Irish law.

The focus of this study is the Irish Planning System and hence it is to the statutory basis for the transposition of the SEA Directive in respect of land-use planning to which we now turn.

A fundament review of the Irish planning system was included in the Programme for Government; this lead to the new planning code defined in the Planning & Development Act 2000. There is an emphasis on sustainable

development in the Act in an attempt to ensure a strategic approach to land-se planning in Ireland.

The Act states that:

"a development plan shall set out an overall strategy for the proper planning and sustainable development of the area"

Hence development plans have sustainability at their core. As highlighted in DOEHLG Guidelines (2004) this sustainability issue is the context for the SEA process at local authorities

The Planning& Development Act 2000 requires that when Regional Planning Guidelines, Development Plans, local Area Plans or Strategic Development Zone planning schemes are being formulated by the relevant authority, they must be accompanied by information about the likely significant effects on the environment of implementing such plans.

There has been an amendment of certain provisions of the Planning and Development Act 2000. SI No. 436 of 2004 Planning & Development (Strategic Environmental Assessment) Regulations, 2004 transposed into Irish Law the SEA Directive insofar as the directive relates to land use planning. The regulations relate to the consideration of the likely significant effects on the environment of a development plan, variation of a development plan, local area plan or an amendment thereto, regional planning guidelines or planning scheme in respect of strategic developments. The regulations come into operation on 21 July 2004. This recent transposition lends relevance and timeliness to this study.

This implementation of the Directive 2001/42/EC stipulates the following requirements:

1. Performance of an SEA for all regional planning guidelines
2. Performance of an SEA in the case of development plans, variations of development plans and local area plans likely to give rise to significant environmental effects

3. Performance of an SEA in the case of Planning Schemes in respect of a Strategic Development Zone.

4. Defines the procedural requirements for the preparation and consideration of the Environmental Report

5. Defines who are the Environmental Authorities to be consulted during the SEA process

2.4.3 Practical Implications of SEA in Ireland

Following an analysis by Scrase (2004) for the UK the following impacts can be determined for Ireland:

- *For the environmental authorities:* it provides opportunities to promote compatibility with their policy aims and targets.

- *For NGOs, developers and the public:* The public are given access to information, and an opportunity to comment on draft plans and reports. Environmental NGOs have strongly welcomed the legislation; it gives them an opportunity to scrutinise screening decisions and to respond to consultations. NGOs, or any other party such as a developer, could launch a legal challenge where an SEA has not been carried out or they consider the process deficient.

- *For plan makers:* The majority of Irish SEAs are likely to be for spatial development plans prepared by local authorities and regional development guidelines prepared by the regional authorities. SEA has been integrated into the new Planning Act. Most other SEAs are likely to be for transport, waste, water management plans and the Rural Development Plan.

2.4.4. SEA Methodologies for Ireland

Noble (2003) notes that SEA practice is taking place in diverse forms and SEA requirements vary from one nation to the next; he writes that "SEA quality performance requires that criteria be developed and applied within the context of

the particular institutional guidelines and requirements in which the SEA system is operating".

The Planning Guidelines for Regional Authorities and Planning Authorities issued by the DOEHLG (2004), outlines a step-by-step guide to the SEA Process:

> **Step 1:** Describe briefly the statutory purpose, geographic area, population, and timeframe of the plan, and its relationship (both vertical and horizontal) with other plans/ programmes.
>
> **Step 2:** Summarise the main findings of the survey and analysis stage, e.g. what are the main development issues facing the area over the lifetime of the plan? What is the likely scale of population / households / employment change? In what parts of the area is most change likely to occur?
>
> **Step 3:** Describe in general terms the current state of the physical environment of the area, with particular reference to (a) areas of environmental importance (such as protected sites); and (b) areas experiencing environmental problems (such as waste, or air or water pollution) at present. Describe how that environment would be likely to evolve on the basis of current development trends but no change in current policies.
>
> **Step 4:** Define (a) broad planning policy objectives for the area based on Steps 1 and 2; and (b) relevant environmental policy objectives for the area taking account of national policy and any relevant international legal obligations (e.g. EU Directives).
>
> **Step 5:** Identify a number of reasonable alternative development strategies for the area which are capable of fulfilling the policy objectives established in Step 4.

Step 6: Evaluate these alternative strategies against the chosen planning and environmental policy objectives (step 4), with a view to establishing the most sustainable option.

Step 7: Select the preferred strategy (which may combine elements of different strategies), stating reasons for the choice, and work it up with detailed policy objectives.

This general overview of the process was published in November 2004. A more detailed methodology was expounded in an Environmental Protection Agency Report in 2003, the so-called 'Scott & Marsden report'

This proposed methodology to undertake strategic environmental assessment for plans and programmes is set in an Irish context and incorporates good practice in SEA in the methodology as well as addressing compliance with the procedural and informational requirements of the SEA Directive.

The proposed methodology is composed of four procedural "Stages". Each procedural stage involves several "Tasks" and for each task a specific approach or method is described to deliver the desired outcome. The stages and tasks are illustrated in the flow charts contained in this chapter; the reader is referred to the report itself for a detailed discussion of the various SEA tasks.

The Stages are:

Stage 1	Screening of Plans and Programmes
Stage 2	Scoping the SEA
Stage 3	Identification, Prediction, Evaluation and Mitigation of Potential Impacts
Stage 4	Consultation, Revision and Post-Adoption Activities.

Stage 1 – Screening of Plans and Programmes

Stage 1 (see Figure 2.4) establishes whether the relevant P/P must undergo an SEA. It uses a series of procedural tasks, firstly to consider the overall characteristics of the P/P to see if it falls within the requirements of the SEA Directive. The second task requires the potential environmental significance of implementing the proposed P/P to be gauged according to a series of significance criteria.

Stage 2 – Scoping the SEA

After deciding in Stage 1 that an SEA is required, Stage 2 is the beginning of the SEA process in earnest. The purpose of Stage 2 is to develop an understanding of the environmental media that may be affected and the key measures proposed in the P/P to set a framework for identifying and evaluating the impact of the measures on these environmental media. Scoping will ensure that the authority remains focused upon the important issues and does not waste resources on unnecessary tasks.

Stage 3: Evaluation and Mitigation of Potential Impacts

The purpose of this stage in the process is to identify and address the likely environmental impacts of the P/P: As presented above in Figure 2.6, this stage involves:

- Obtaining an understanding of the existing state of the environment with respect to the aspects that may be affected by the P/P change as a consequence of implementing the P/P (and its alternatives).
- Evaluating the significance of these changes in terms of their compliance with the environmental policies, objectives and standards identified during the scoping stage.
- Considering how the P/P can be revised or refined to mitigate significant adverse effects and to maximise any benefits offered by the P/P.

Figure 2.4: Stage 1 of the Scott & Marsden Methodology

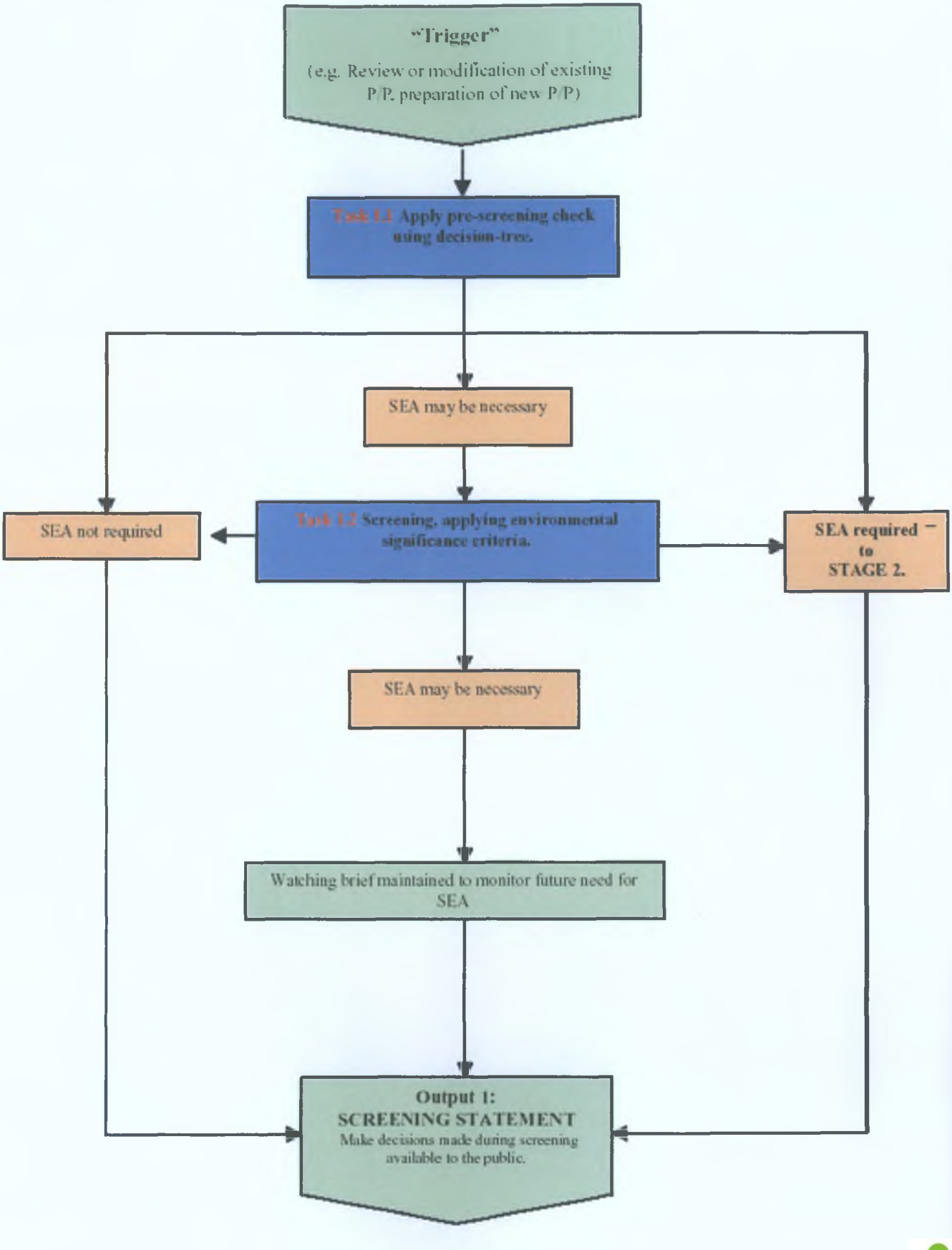


Figure 2.5 : Stage 2 of the Scott & Marsden Methodology

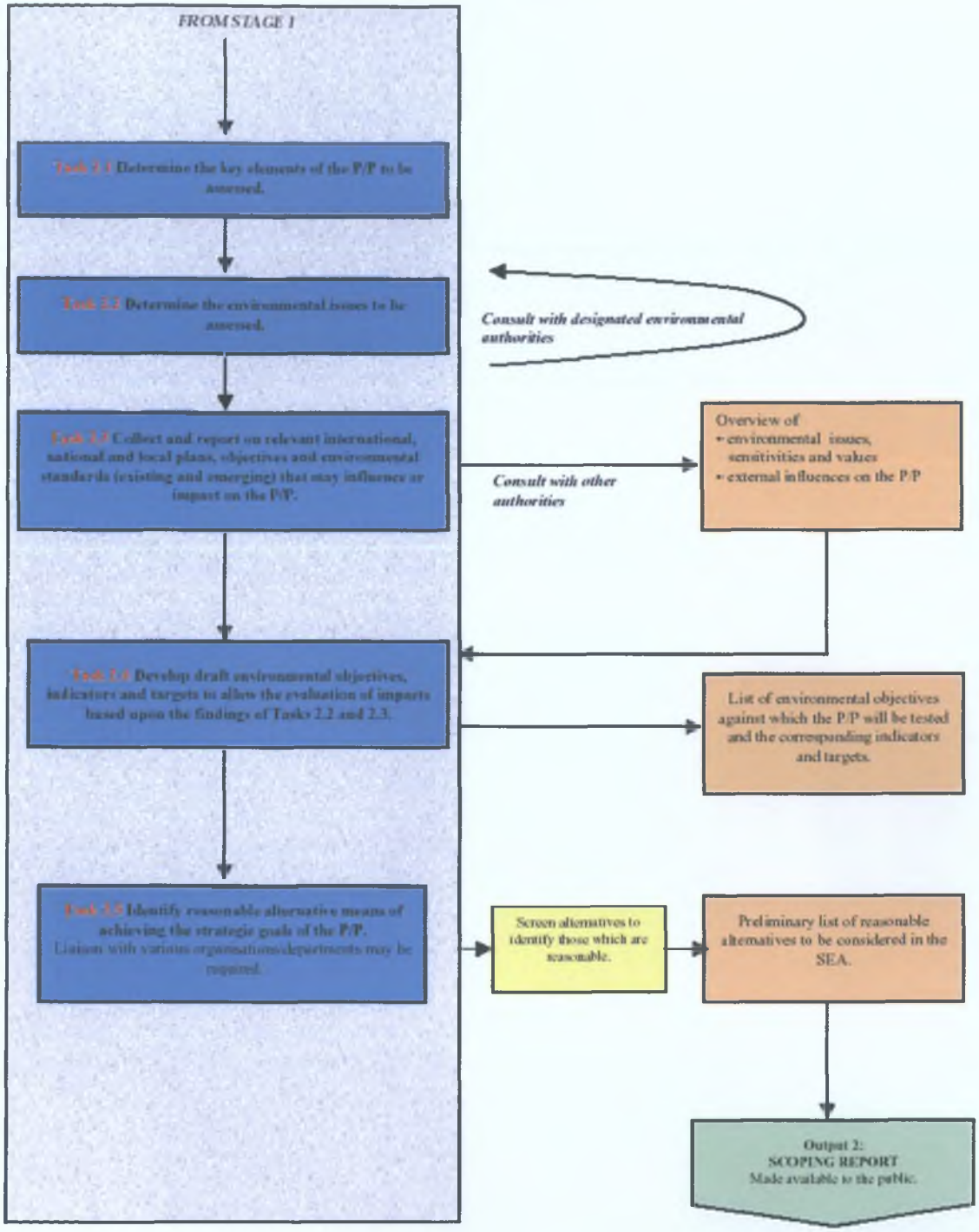


Figure 2.6: Stage 3 of the Scott & Marsden Methodology

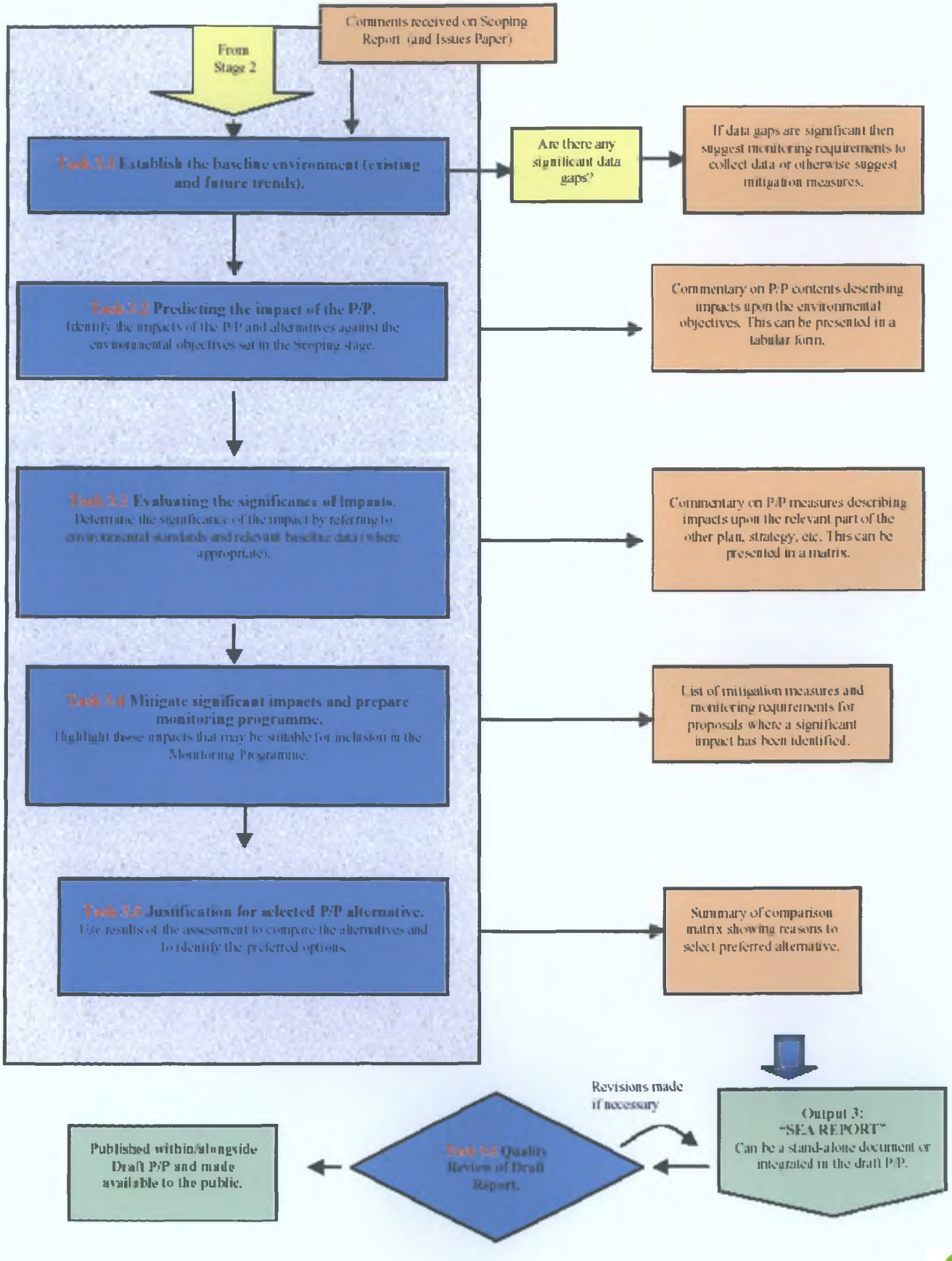
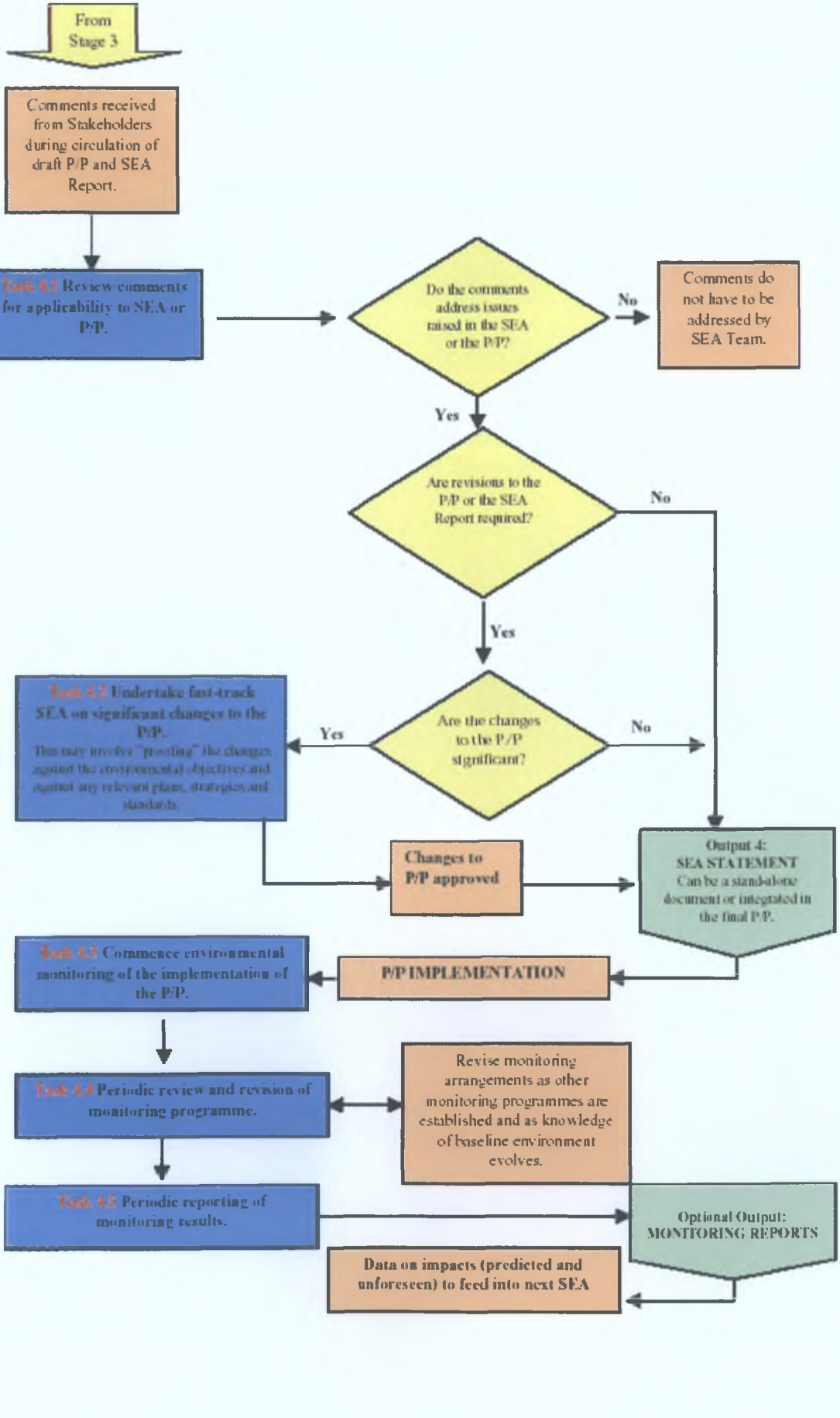


Figure 2.7: Stage 4 of the Scott & Marsden Methodology



Stage 4 – Consultation, revision and post-adoption activities.

Stage **4** concerns consultation with stakeholders on comments received during the circulation of the draft plan/programme and SEA Report, possible revision of the plans, and post adoption of plan activities. The various tasks are presented in Figure 2.7.

The question arises in 2005 as to whether forward planners in the Irish local authorities are ready to prosecute a quality environmental assessment process at the strategic level as defined by Scott & Marden's detailed methodology.

2.5 A COMPETENCY-BASED APPROACH TO AN IDENTIFIED QUESTION

2.5.1 Introduction

A competency framework is increasingly advocated in modern literature on learning and development. Garavan & McGuire (2001) identify that the use of competency frameworks is commonplace in organisations.

Heffernan & Flood (2000) suggest,

"competencies can potentially be used to integrate and link an organisation's main HR processes – recruitment, training and development, performance management and rewards – to the business strategy".

The initial problem with adopting a competency framework centres on definitional aspects of what competencies are. McClelland (1971) attempted to establish variables, which successfully predicted job performance or success in life. He termed the word 'competencies' that can be shown to predict their performance. Boyatzis (1982), in a study focusing on 2000 practising managers, reached a similar conclusion to McClelland that competence is an underlying characteristic causally related to superior performance.

By contrast, Ashworth and Sexton (1990) suggest that it is not just the attributes of jobholders but outcomes expected from a job when it is performed adequately. These contrasting views lay the basis for considerable literature and debate on what constitutes 'competencies' and the value of a competency framework; this debate and literature is not developed further in this thesis as it will divert attention from its central focus, the SEA Directive and the application of the Scott & Marsden Methodology as a competency basis for the establishment of capacity gaps in the prosecution of quality SEA performance.

2.5.2 Environmental Assessment Education: A Competency-Based Approach

Hayes et. al. (2000) warn that competency lists produced by systematic studies, no matter how reliable and valid the methods used, may not reflect the competencies that practitioners may need in the future. The authors also suggest

that missing elements in any given competency list may be critical determinants of effective performance and an alternate list may prove equally effective. Hayes et. al. (2000) suggest, that whilst competency lists may be a useful guideline, organisations (and educational establishments) should exercise caution. They contend it would be:

"erroneous to assume that either all of the competencies included in a programme will be relevant to all managers or that a manager who develops all of these competencies to a satisfactory standard will be competent to perform a particular managerial role effectively"

In applying a competency-based approach to *hospitality* management education, Tas (1988) defined job competencies as "those activities and skills judged essential to perform the duties of a specific position" - in this case, entry-level graduate hospitality management trainees. Following a literature review, Tas (1988) identified seventy competencies that might be required of hospitality graduate trainee managers. Following two separate review panels checking for clarity, content and validity, these seventy competencies were reduced to thirty-six.

Unlike Tas, this author's competency list arises from a study by Scott & Marsden (2003) in a report for the Irish EPA in which is developed a SEA methodology for the Irish context. This method is defined as a set of tasks that are considered comprehensive and amenable to a quality SEA performance.

2.6 SUMMARY

This chapter has considered some of the generic and current literature relevant to the nature of strategic environmental assessment and its impact for local authority forward planners. The notion of a competency based approach as an appropriate framework for education and training of environmental assessors was explored. The review concluded with a methodology for the exploration of the relationship between Irish Local authorities and the SEA Directive requirements.

CHAPTER THREE
RESEARCH METHODOLOGY

Chapter 3

RESEARCH METHODOLOGY

1.1 INTRODUCTION

The objective of this chapter is to justify and describe the methodology used to collect and analyse pertinent primary and secondary data for this study. The primary objectives of this research are to investigate the readiness of Irish Local Authorities to meet the requirements of the SEA Directive and to clarify the relationship between strategic environmental assessment competencies and the current level of preparedness for their prosecution.

The initial approach to this study involved a literature review to understand the nature and extent of the issues involved. The research objectives were best achieved through a combination of secondary and primary research. A two-pronged primary research approach was adopted which built on the literature themes to obtain accurate, valid and reliable data from relevant local authorities.

Primary Data

Two analytical survey methods were used to determine relationships across variables.

Secondary Data

Secondary data designed to address the research questions was identified in the literature review with emphasis on ensuring information was 'pertinent, accurate, timely and usable' (Buttle, 1986). Almost all the literature in this field is recent with much dating from the mid 1990's. The literature was used as a means of benchmarking the study ("concurrent validity") and as a basis for discovery and building on other research. The literature review identified information concerning the SEA process and its prosecution in an Irish context. Secondary data sources included articles in refereed and other journals, abstracts and indexes; periodicals; industry bodies and government organisations; trade and other press; and the Internet.

Libraries visited:

Institute of Technology Sligo

Tourism College, Killybegs

Trinity College, Dublin

3.2 DATA QUALITY MANAGEMENT

Any knowledge gained from this investigation will be grounded on the collected data; hence, attention to data quality must be a central preoccupation for this researcher. Brackstone (1999), in an analysis of data quality management issues for a statistical agency, identifies six dimensions of data quality: relevance, accuracy, timeliness, accessibility, interpretability, and coherence; these can form a framework for addressing the data quality of this study (and indeed the whole of this dissertation is embedded within a matrix defined by these quality dimensions).

Relevance is about whether information is produced on the right topics and using appropriate concepts for measurement within these topics. The relevance of the study data reflects the degree to which it meets the needs of possible users of the data, such as DOEHLG, Local Authorities, environmental trainers, etc.

Given that relevant topics are being measured using appropriate ideas, are they being measured with sufficient ***accuracy***? This is the degree to which the data correctly describes the phenomena it was designed to measure. Accuracy is characterised in terms of error in statistical estimates, coverage, sampling, non-response, etc. This aspect of data quality is directly addressed in this chapter.

Accurate data/information on relevant topics will not be useful if it arrives after they have made their decisions, and so the ***timeliness*** of data is another important dimension of its fitness. Clearly the timeliness of information will influence its relevance.

The ***accessibility*** of data refers to the ease with which it can be obtained. Here we are considering "How the information is available?" rather than the previous dimension of "When is the information available?" This dimension of data quality does not play a significant role in this study given that this is a Masters of Science thesis.

To make appropriate use of data/information, people who make use of the data must know what they have and to understand the properties of the information. This ***interpretability*** of data reflects the availability of supplementary information and metadata necessary to interpret and use it.

Finally, as an extension of interpretability, users of data are sometimes faced with using different sets of statistical information derived from different sources and at different times. Appropriate use is helped if information can be validly compared with other related data sets. Data ***Coherence*** refers to the degree to which the data fits into broad frameworks and uses standard ideas.

Brackstone (1999) points out that these six data quality dimensions "are not independent of each other [but] despite these interactions, these six dimensions provide a useful basis for examining how quality…should be managed".

Using this framework, the two surveys of this study are analysed for data quality. The case for relevance, timeliness, interpretability and coherence has been made in Chapter One. In this Chapter, the issue of the ***accuracy*** of the data will be addressed.

The pre-survey accuracy of the surveys can be considered by answering questions such as the following for each survey:

1. *Has sufficient quantity of data been collected?*
2. *Have there been any errors in collecting and analysing the data?*
3. *Do those who responded represent the sample population? ("internal validity")*

4. *Does the sample population represent the larger group population about which information is required?("external validity")*
5. *How well does the questionnaire reflect its objectives? ("Content Validity")*
6. *How well are the results obtained supported by other surveys in this area? ("Concurrent Validity")*
7. *Does the data collected provide for the assumptions of the normative statistical techniques employed? ("Statistical Validity")*

3.3 METHODOLOGICAL FRAMEWORK : General Issues Questionnaire

3.3.1 Selection of Research Setting / Units of Analysis

James & McColl (2003) suggest that local authorities appear to be the least prepared of all sectors for the implementation of the SEA Directive in the UK. On foot of this, Pettit & Simmons (2003) focused their efforts on examining the state of readiness of the UK Local Authorities for the SEA Directive. In replicating this research in the Irish context, the study population was set as the 34 local authorities in the Republic of Ireland (see Figure 3.1 below). The views of the local authorities were equated with the views of the Senior Executive Planners in each of the local authority forward planning sections.

Figure 3.1: The 34 local authorities in the Republic of Ireland

3.3.2 Selection of Investigation Technique

The survey instrument was a postal questionnaire, defined by Cox (1979) as a pencil-and-paper measurement instrument used when data is collected by means of self-reporting techniques. Postal questionnaires are popular because they:

- Enable standardisation and uniformity
- Eliminate interviewer bias
- Can be administered to a large number of respondents simultaneously
- Are relatively inexpensive
- Possibility of generalization to the whole population and other similar populations
- High accuracy of results

Possible disadvantages of postal questionnaires are possible low response rate and lack of control of the research setting (Pizam, 1994). Sekaran (2003) points out that response rates to postal questionnaires are typically low; she suggests 30% as acceptable. Lucas (1999) contends higher than 30% is rare, Hussey & Hussey point out that response rates of 10 per cent are not uncommon.

Furthermore Hussey & Hussey (1997) point to concerns of non-response bias that can take two forms.

The first, 'questionnaire non-response', is where all the questionnaires are not returned and the second when item non-response occurs. Non-response can be crucial because the research design is based on the fact that the findings may be generalized from the sample to the population. High non-response rates may bias the sample and thus not be representative of the population. Wallace & Mellor (1988) cited in Hussey & Hussey (1997) identifies three possible approaches to dealing with non-response:

1. Analyse responses by date of reply, send follow-up letter and compare replies
2. Compare characteristics of responses with those of the population, and

3. Compare characteristics of responses with those who did not respond

The author was not able to employ method (2) or (3) above to address this aspect of data validity as no data on LA Strategic planner exist. Method 1 was used.

3.3.3 Design of the Questionnaire

The questionnaire content was based on the IEMA 2003 study of UK Local Authorities. The author contacted the researchers involved and secured a copy of the questions. This question set was enhanced to allow an analysis of variance to be performed (through the introduction of interval data) and hence the ascertaining of structure among the respondents; i.e. Do the various regional authorities differ in their readiness for the requirements of the SEA Directive.

Appendix one contains a copy of the questionnaire designed by the author. Hussey & Hussey (1997) suggest that questionnaires should be no longer than two sides of A4 paper for postal questionnaires. This first questionnaire is fully contained on one side of A4.

The questionnaire was designed so that it could be easily coded and subject to computer analysis employing the data analysis add-in for Microsoft Excel. Closed questions, scores and simple checklists were adopted, allowing a single response to each question. A limited number of questions allowed for elaboration if the respondent so desired.

3.3.4 Pre-Survey Credibility of the Data

Has sufficient quantity of data been collected?

This survey is a replication and enhancement of an IEMA survey of UK Local Authorities. This research is but one part of an on-going process of discovery in the debate as to the readiness of stakeholders to meet the requirements of the SEA Directive.

Does the sample population represent the larger group population about which information is required?("external validity")

The opinions of local authorities as to their readiness to meet the requirements of the Directive are the focus of this study. External validity is assured as all the local authorities were sampled.

How well does the questionnaire reflect its objectives? ("Content Validity")

1. The populations are well-defined
2. The questionnaire is likely to elicit complete responses as it was designed to require minimal effort to complete.
3. All respondents were assured that all information supplied would be anonymous, with only group data being presented.

How well are the results obtained supported by other surveys in this area? ("Concurrent Validity")

This will be determined in the results section (Chapter 4) where the determined data shall be compared and contrasted with the IEMA UK study.

Does the data collected provide for the assumptions of the normative statistical techniques employed? ("Statistical Validity")

This will be determined in the results section (Chapter 4); however, some statistical validity can be ascertained for the use of the analysis of variance:

1. Every Local Authority is equally likely to be in the sample because they were all sent the questionnaire.
2. The scoring variables were at the ratio/interval scale of measurement.

3.3.5 Administration of the survey instrument

The questionnaire was mailed to the sample population with a cover letter (Appendix 1) explaining the purpose and context of the study, and in accordance with good practice, a self-addressed, stamped envelope for the return of the questionnaire.

3.3.6 Statistical Methodology

Descriptive Techniques employed:

The quantitative data collected via the first survey was explored and summarised via tables, graphs and the summary statistics of mean and standard deviation. (See Appendix 3)

Normative techniques employed: Analysis of Variance

An analysis of variance (ANOVA) was conducted on the characteristics of the respondents to determine whether regional authority membership had any relationship to the respondents' ratings of importance or level of preparedness.

Method hypothesis:

Different regional authorities differ, in a statistically significant way, in their mean scoring of "Level of Importance" and "Level of Preparedness" for the competency

Null Hypothesis:

There is no statistically significant difference for different regional authorities in their mean scoring of "Level of Importance" and "Level of Preparedness" for the competency

3.4 METHODOLOGICAL FRAMEWORK: Specific SEA Competencies

3.4.1 Selection of Research Setting and Units of Analysis

Initially the intention of the study was to examine SEA competencies and current level of preparedness within Irish stakeholders as a whole. It quickly became apparent that some government departments were very defensive on this issue and this did not bode well for a good response rate. Also with the replication of the UK study as already outlined, it seemed logical to focus on the local authorities planners who would be involved with SEA; this would enable a better exploration of the readiness of the local authorities to meet the requirements of the Directive and would be a natural enhancement of the initial survey.

The second survey can be viewed as a learning needs analysis (LNA), a key step in any learning cycle. It is about identifying the nature of the need; the outputs drive the design of the intervention to address the need. Also, a LNA plays an important part in the evaluation of the effectiveness of any intervention. Cook (2005) notes that "the focus in LNA should be the identification of performance gaps related to skills, knowledge and behaviour…the outputs of the LNA should inform the creation of terminal objectives for the development intervention".

The units of analysis for this study are as follows:

Population = Irish Local Authority Strategic Planners

= Sample Population also

3.4.2 Selection of Investigation Technique

Given the author's computer/software engineering background, an email survey was undertaken. Opperman, M. (1995) in a discussion of the advantages and disadvantages of using E-Mail surveys outlined the following strengths and weaknesses of email surveys:

Strengths:

1. **Cost-savings:** It is less expensive to send questionnaires online than to pay for postage or for interviewers.
2. **Ease of Editing/Analysis:** It is easier to make changes to questionnaire and to copy and sort data.
3. **Faster Transmission Time:** Questionnaires can be delivered to recipients in seconds, rather than in days as with traditional mail.
4. **Easy Use of Pre-letters:** You may send invitations and receive responses in a very short time and thus receive participation level estimates.

5. **Higher Response Rate:** Research shows that response rates on private networks are higher with electronic surveys than with paper surveys or interviews.
6. **More Candid Responses:** Research shows that respondents may answer more honestly with electronic surveys than with paper surveys or interviews.
7. **Potentially Quicker Response Time with Wider Magnitude of Coverage:** Due to the speed of online networks, participants can answer in minutes or hours, and coverage can be global.

Weaknesses:

1. **Sample Demographic Limitations:** Population and sample limited to those with access to computer and online network.
2. **Lower Levels of Confidentiality:** Due to the open nature of most online networks, it is difficult to guarantee anonymity and confidentiality.
3. **Layout and Presentation issues:** Constructing the format of a computer questionnaire can be more difficult the first few times, due to a researcher's lack of experience.
4. **Additional Orientation/Instructions:** More instruction and orientation to the computer online systems may be necessary for respondents to complete the questionnaire.
5. **Potential Technical Problems with Hardware and Software:** As most of us (perhaps all of us) know all too well, computers have a much greater likelihood of "glitches" than oral or written forms of communication.
6. **Response Rate:** Even though research shows that e-mail response rates are higher, Opermann warns that most of these studies found response rates higher only during the first few days; thereafter, the rates were not significantly higher.

3.4.3 Design of Questionnaire

The questionnaire in checklist form was designed to elicit responses from the sample population along two main dimensions; (1) the relative importance of a list of thirty-three SEA performance competencies and (2) the perceived relative level of current preparedness to carry out each competency. The competencies were listed on one side of a Microsoft Word form-page and there were two columns where respondents had to score the competencies relating to the dimensions of importance of competency and level of preparation using a drop-down list for entry. The thirty-three SEA competencies were derived from Scott and Marsden (2003).

Further information was gathered in respect of the characteristics of the respondent. This was done in order to establish if significant differences arose between respondents in respect of the extent of training/exposure to information of the planners concerning SEA.

The instrument employed for the rating of both the relative importance and the relative preparedness is a Lickert five point scale and is illustrated in Table 3.1

Table 3.1 Scoring System used for planner scoring

Semantic Label	Lickert Scale Value
Absolute Importance/Preparedness	5
Considerable Importance/Preparedness	4
Moderate Importance/Preparedness	3
Little Importance/Preparedness	2
No Importance/Preparedness	1

As per the first survey, the questionnaire was designed so that it could be easily coded and subject to computer analysis employing the statistical add-in available in Microsoft Excel. Closed questions, scores and simple checklists were adopted, allowing a single response to each question.

3.4.4 Pre-Survey Credibility of the Data

How well does the questionnaire reflect its objectives? ("Content Validity")

1. The populations are well-defined
2. The questionnaire is likely to elicit complete responses as it was designed to require minimal effort to complete.
3. All respondents were assured that all information supplied would be anonymous, with only group data being presented.

How well are the results obtained supported by other surveys in this area? ("Concurrent Validity")

This author does not know of the existence of similar data.

Does the data collected provide for the assumptions of the normative statistical techniques employed? ("Statistical Validity")

This will be determined in the results section (Chapter 4); however, some statistical validity can be ascertained for the use of the analysis of variance:

1. Every identified forward planner is equally likely to be in the sample because they were all sent the questionnaire.
2. The scoring variables were at the ratio/interval scale of measurement.

3.4.5 Administration of the survey instrument

Each Local Authority was contacted in turn to determine the identities of the forward/central planning teams; the email address of each such strategic planner was ascertained and the survey was sent to them for completion, along with a cover letter explaining the purpose and context of the study.

3.4.6 Statistical Methodology

Descriptive Techniques employed:

The quantitative data collected via the survey was summarised via tables, graphs and the summary statistics of mean and standard deviation. (see Appendix 3)

Normative techniques employed:

Match-pair t-test: ***Ascertaining whether or not differences are significant***

Two collections of Irish stakeholders' scorings exist. In detail the collections are different – different highs, lows and average scores. Is the measured difference in average scoring large enough that the author should reject the null hypothesis that in fact such differences are due to chance?

The question basically reduces to whether the likely ranges for the mean of each sample overlap (in which the means could be the same in the overlap of the intervals, and we may not reject the null hypothesis) or if they do not overlap (in which case we must reject the null hypothesis: the difference in the person's scoring for the competency is most likely not due to chance).

To report the variety of possible outcomes, from means not "significantly" different, to means in fact "significantly" different, the probability that the difference is down to chance is reported.

The null hypothesis shall be rejected as false if p is small.

An unpaired t- test should not be applied to this data because the second sample is not, in fact, randomly selected; the second sample is the same as the first for different scoring focus. The paired t-test focuses on the difference between the paired data and reports the probability that the actual mean difference is consistent with zero; this comparison is aided by the reduction in variance achieved by taking the differences.

Research hypothesis:

There is a statistically significant difference in planner's mean scoring between "Level of Importance" and "Level of Current Preparedness" for the competency.

Null Hypothesis:

There is no difference in the planner's mean scoring between "Level of Importance" and "Level of Current Preparedness" for the competency.

Rejection level: $p < 0.05$

Analysis of variance:

An analysis of variance (ANOVA) was conducted to determine the extent of informing/training actions performed so far had any relationship to the respondent's ratings of competencies or level of preparedness.

Method hypothesis:

Different training/informing interventions by local government have resulted in a statistically significant difference in mean scoring of "Level of Importance" and "Level of Current Preparedness" for the competency

Null Hypothesis:

Different training/informing interventions by local government have NOT resulted in a statistically significant difference in mean scoring of "Level of Importance" and "Level of Current Preparedness" for the competency

3.5 LIMITATIONS OF THE STUDY

1. As already mentioned, the focus of this research is the Local Authority sector; no consideration of NGOs', Government Departments or Environmental Consultants is pursued.

2. A second limitation is the list of competencies employed in the study. As the literature review reveals, there is a spectrum of approaches to SEA performance; the list employed derives from a more EIA-derived approach. This study is the first to test the validity and reliability of the

Scott & Marsden approach, and judgement on the competencies will be better arrived at subsequent to more experience in the performing of SEAs.

3. The low number of potential respondents.

3.8 SUMMARY

This chapter has detailed the methodological approach adopted in this study. The primary and secondary research approach was detailed and justified as was the research, sampling and questionnaire design. The data collection and analysis methodology was identified; validity/reliability was explored concluding with a review of the limitations of the study.

CHAPTER FOUR

RESULTS

Chapter 4

RESULTS

4.1 GENERAL READINESS SURVEY

4.1.1 Post-Survey Credibility

Having collected the data, additional aspects of data /accuracy/credibility can be addressed.

(a) Reliability of the data

The questionnaire answers were carefully transposed into Microsoft Excel and double checked. This was the only transfer of data that allowed for human error.

(b) Validity of the Data

- *Do those who responded represent the sample population? ("Internal validity")*

  In terms of response rate, the number of valid questionnaires included in this analysis was 17 representing 50% per cent of the sample population. The valid response rate of 50% would appear, generally to be within acceptable levels. Surpassing Sekaran's (2003) 'acceptable' level of 30%, it is also considerably higher than the 'not uncommon' rate of 10% for postal questionnaires suggested by Hussey & Hussey (1997).

  All respondents were from Senior Executive Planners of local authority's' strategic planning sections; it was the case that some respondents forwarded the questionnaire to another member of the forward planning section in a better position "to better reply accurately to the survey questions".

- *Does the sample population represent the larger group population about which information is required?("external validity")*

  In this questionnaire, the sample population equals the group population as there are only 34 local authorities in Ireland and all were included in the survey.

- *Does the data collected provide for the assumptions of the normative statistical techniques employed? ("Statistical Validity")*

  Given that the sample size is small (17<30) the assumption that the population is normally distributed cannot be relaxed.

  Also there were some large differences in the population variances.

4.1.2 Local Authorities meeting the requirements of the SEA Directive?

For the interval data on the questionnaire, the following rating interpretation will be used:

0 to 2.49:	'Little to no' progress
2.5 to 3.49:	'Moderate' Progress
3.5 to 4.49:	'Good' Progress
4.5 to 5:	'Excellent' Progress

Making staff aware of SEA Requirements:

The results (see Figure 4.1 & Table 4.1) showed that the local authorities consider that they have achieved a moderate level of progress in making staff aware of the SEA requirements; this is one year on since the interpretation and implementation of the SEA Directive was legally required.

Figure 4.1: Histogram of Staff Awareness Progress

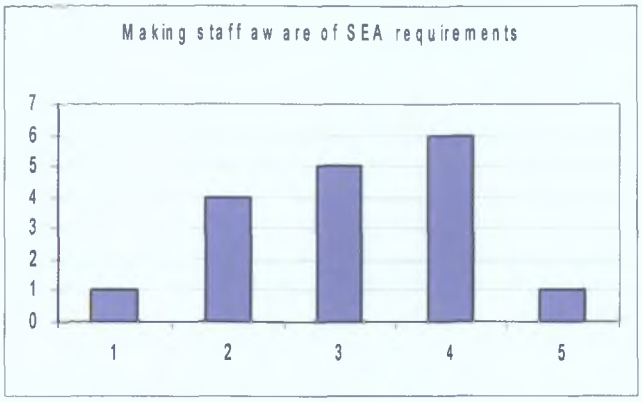


Table 4.1: Summary Statistics

Mean	3.12
Standard Error	0.26
Median	3.00
Mode	4.00
Standard Deviation	1.05

Resources for SEA Implementation:

Local Authorities were asked to estimate the resources required for the implementation of SEA in terms of staff time and financial cost. In each of the cases an overwhelming majority (88%) did not feel able to provide an estimate. Where estimates were provided the answers ranged from 70 through to 150 staff days per year and €10,000 to €15,000 and "possibly more". This in line with the local authority consideration that they had made "little to no" progress in regards identifying/allocating resources for SEA implementation. The results are displayed below in Figure 4.2 and Table 4.2.

RTPI (2004) notes in the case of UK local authorities:

" few local authorities actually have any money allocated for SEA work. It seems likely that the lack of resources will be a significant barrier to effectively implementing the SEA Directive."

The situation would seem to be similar for Irish local authorities.

Figure 4.2: Histogram for Implementation Resources

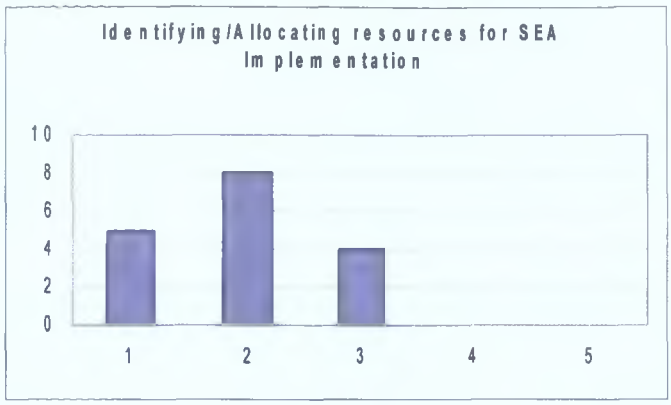


Table 4.2: Summary Statistics

Mean	1.94
Standard Error	0.18
Median	2.00
Mode	2.00
Standard Deviation	0.75

Preparation for SEA:

The survey showed that the percentage of authorities that have and haven't carried out preparation for SEA is fairly even at 53%. When asked about in house capabilities and intentions to use consultants, roughly half (53%) of local authorities who responded stated that they do have the in house capability; however this figure stands along with the expressed opinion that 76% will be relying on consultants to ensure compliance with formal SEA requirements.

Also, further analysis of the preparation issues revealed "little to no" progress for all the following two areas of SEA action:

1. Addressing the implication of the SEA Directive with respect to your role in data/information provision (Figure 4.3 & Table 4.3)
2. Addressing the implication of the SEA Directive with respect to your role in data/information use (Figure 4.4 & Table 4.4)

While it is clear that SEAs should not become a large data collection and collation exercises in their own right, greater attention to data provision and use is important in the implementation of the SEA Directive, so as to properly assess the significance of the effects of plans against objectives. In some cases, the sharing of data across organisations will be necessary. In the case of information/data provision and use, the SEA regulations are now in place and guidance documentation is already provided and so this is a poor result.

Figure 4.3: Histogram for SEA Data Provision

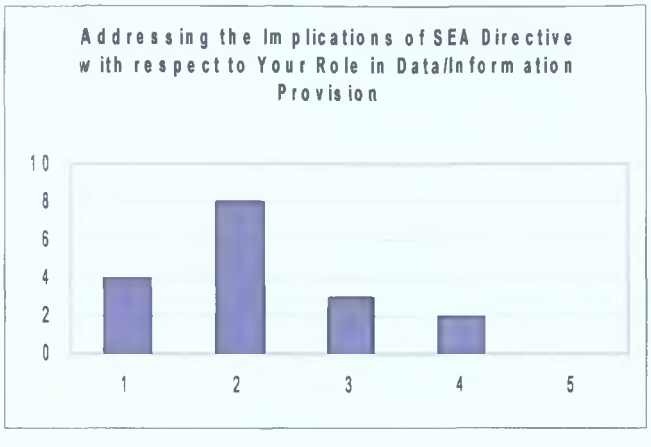


Table 4.3: Summary Statistics	
Mean	2.18
Standard Error	0.23
Median	2.00
Mode	2.00
Standard Deviation	0.95

Figure 4.4: Histogram for SEA Data Use

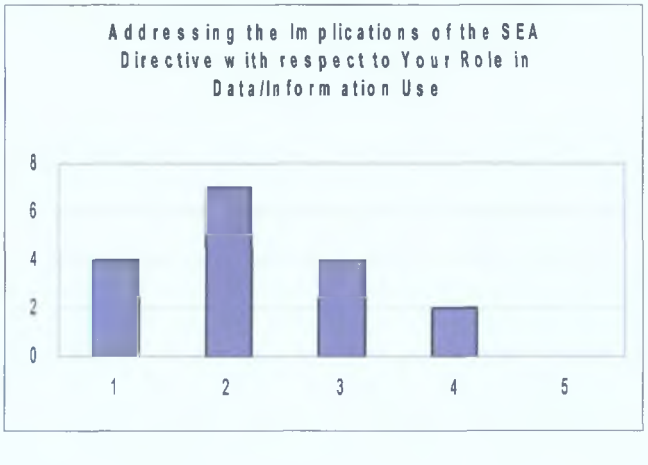


Table 4.4: Summary Statistics	
Mean	2.24
Standard Error	0.24
Median	2.00
Mode	2.00
Standard Deviation	0.97

Figure 4.5: Histogram for Non-EIA Aspects

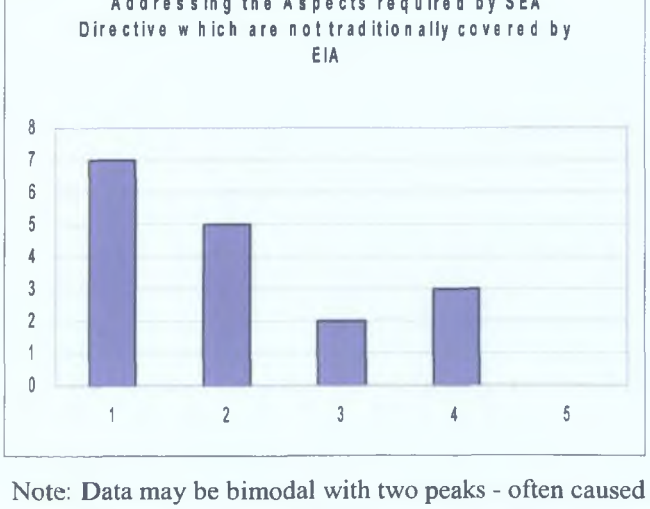


Table 4.5: Summary Statistics	
Mean	2.06
Standard Error	0.28
Median	2.00
Mode	1.00
Standard Deviation	1.14

Note: Data may be bimodal with two peaks - often caused by an underlying sample discontinuity
If data is uni-modal then Figure 4.5 indicates a very poor rating

Non EIA Aspects of SEA:

Figure 4.5 above, summarised in Table 4.5, shows that there is much to be done in addressing those aspects of the SEA Directive that are not traditionally covered by the EIA process. SEA tasks such as monitoring are vital to the achievement of the Directive's objectives and this result indicates that there is much to be done in this area.

SEA Training:

The results indicate that the majority of authorities are aware of training courses on SEA (70%). A similar percentage of authorities indicated that they would like to send staff on training courses. This bodes well for an improvement in SEA capacity going forward.

Of concern is the fact that 30% of local authorities are not planning on sending staff on SEA training courses; this may be due to a lack of funding to either release staff or pay for the courses. Alternatively it could be that these authorities are not aware of the full requirements of the SEA Directive, or that they are awaiting further guidance from central government. One east coast planner in a telephone interview informed this author that they realise that they need training in the SEA area, however they were not being released as the planning department is too busy.

Rationalisation of processes:

SEA will have to be carried out with consideration of other operations and, particularly for local authorities, in some circumstances in conjunction with other actions. Figure 4.6 shows the response profile for the question addressing this aspect of SEA implementation/preparation; it is summarised in Table 4.6. This means there are potential efficiency gains between the plans and programmes of different authorities, although how these might be realised needs careful thought. Figure 4.6 & Table 4.6 illustrate that most of the organisations represented have made no progress towards rationalising the processes of SEA with other processes such as EIA.

Figure 4.6: Histogram for SEA Streamlining

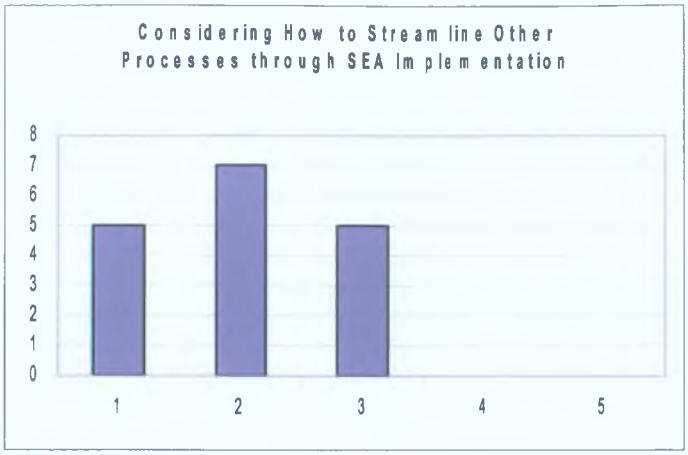


Table 4.6: Summary Statistics	
Mean	2.00
Standard Error	0.19
Median	2.00
Mode	2.00
Standard Deviation	0.79

4.1.3 Discussion of results

Several conclusions have been drawn from the survey results. The questionnaire has shown that preparation for the SEA Directive within local authorities needs to be raised further. A range of methods could be adopted for this. Seminars and workshops have been held and it is likely that these should be continued. Short briefing notes and web based information may also prove to be valuable in raising awareness of the Directive and its importance. The European Commission and the DOEHLG have recently published guidance on SEA and its requirements. This should help increase understanding amongst Local Authorities.

A significant number of local authorities have indicated that it is their intention to use consultants. Given that one of the objectives of the 'in house' approach is to improve the integration with the plan making process, handing over the SEA to a consultant would appear to be inconsistent with this. If consultants are to be used, it may be most effective if this is with a view to 'in house' staff learning about the approach in order to take greater ownership of future SEAs.

The significant lack of preparation for the SEA Directive is a cause for concern twelve months after the deadline for the implementation of the Directive. Given this, it is anticipated that the quality control provision for SEA reports will be an important factor in assuring the quality and effectiveness of SEA reports.

4.1.4 Testing for Differing Opinions between Regional Authorities

An analysis of variance on the survey data (details in the Appendix) revealed no statistically significant rating of progress achieved along any of the five interval data dimensions relative to which regional authority the local authority had membership.

4.1.5 Relation to the IEMA UK Study

On indications that the UK local authorities were the least prepared of all sectors for the implementation of the SEA Directive in the UK, the IEMA, on behalf of the Office of the Deputy Prime-minister (ODPM), surveyed all local authorities in the UK. The aim was to identify how aware local authorities are of both the SEA Directive and its requirements. This author's first survey is an augmentation of this survey and so may be usefully compared to the IEMA Survey, though they are separated by nearly two years in administration. Table 4.7 shows the comparison.

Table 4.7: Comparison of Thesis First Study & IEMA Survey

Focus	*Irish Local Authorities Thesis First Survey (2005)*	*UK Local Authorities IEMA Survey (2003)*
Response rate	50%	15.5%
SEA Financial costs	€10,000 to €15,000	€1,350 to €75,000
SEA Staff Costs (in staff days per year)	70 to 150	20 through to 225
% unable to indicate SEA cost data	88%	Over 50%
% not having in-house capability to do sea	50%	"the majority"
% relying on consultants to comply with SEA	76%	28%
% of local authorities not planning on sending staff on SEA training courses,	30%	55%

Of particular note in the comparison is the confidence of half the responding local authorities that they had in-house capability to perform SEA, whereas the majority of UK local authorities considered that they did not have this capability; this result is further contradicted, however, in the higher percentage of Irish local authorities that intend on relying on consultants to comply with the requirements of the SEA Directive, and the lower percentage of Irish local authorities that do not intend to send staff on SEA training courses.

There is a wide range of estimates for SEA financial costs with a considerable underestimating of costs by the Irish local authorities relative to their UK counterparts; however, there is a larger percentage of local authorities in Ireland who were unable to indicate SEA cost data.

4.2 SPECIFIC SEA COMPETENCIES SURVEY

4.2.1 Post-survey Credibility of the Data

Having collected the data, additional aspects of data credibility can be addressed.

(c) Reliability of the data

As with the first survey, the questionnaire answers were carefully transposed into Microsoft Excel and double checked. This was the only transfer of data that allowed for human error.

(d) Validity of the Data

- *Do those who responded represent the sample population? ("Internal validity")*

  In terms of response rate, the number of valid questionnaires included in this analysis was 33 representing 28% per cent of the sample population. The valid response rate of 28% would appear, generally to be within acceptable levels. Although less than Sekaran's (2003) 'acceptable' level of 30%, it is also considerably higher than the 'not uncommon' rate of 10% for postal questionnaires suggested by Hussey & Hussey (1997).

All respondents were from members of Local Authority's' strategic planning sections.

- *Does the sample population represent the larger group population about which information is required?("external validity")*

  In this questionnaire, the sample population equals the group population as the author contacted all forward planners at the 34 Irish local authorities.

- *How well does the questionnaire reflect its objectives? ("Content Validity")*

  All of the competencies were rated as essential or of considerable importance – the top two (2) levels of importance out of a possible five (5).

  Only one communication was received that queried the questionnaire as not to be understandable.

- *Does the data collected provide for the assumptions of the normative statistical techniques employed? ("Statistical Validity")*

  There were no large differences in the population variances and the effect of inequality of variances is mitigated when the two sample sizes are equal, so that the t test is fairly robust against inequality of variances if the sample sizes are equal.

Sample size is reasonable (33 > 30) hence the assumption that the population is normally distributed is relaxed.

- *Concurrent Validity – How well are the results obtained supported by other surveys in this area*

  'Triangulation' with other similar research can not be pursued as the author does not know of a similar approach in the SEA field to addressing capacity issues via the approach taken in the second survey.

4.2.2 Summary for "IMPORTANCE LEVEL"

Table 4.8 DESCRIPTIVE ANALYSIS OF LEVEL OF IMPORTANCE

Absolute Importance 4.5 or over	Considerable Importance 3.5 or over	Moderate Importance 2.5 to 3.49	*Little to No Importance* 0 to 2.49	Rank	Mean	Std Dev
Identifying the environmental issues to be assessed				1	4.39	0.61
Determining the key elements of the P/P to be assessed				2	4.36	0.60
Consulting with the environmental authorities				3	4.27	0.72
Determining if predicted changes will affect environmental resources which are protected by laws/policies				4	4.27	0.76
Consulting with the designated environmental authorities				5	4.24	0.66
Determining if the P/P is likely to resit in e-impacts of sch a nature that it should be taken forward for SEA?				6	4.18	0.73
Obtaining an understanding of the existing state of the environment				7	4.18	0.73
Determining if the P/P is likely to have a significant effect on a Natura 2000 site				8	4.15	0.67
Identifying how each alternative P/P can be revised/refined to mitigate significant adverse effects & maximise any benefits offered by the P/P				9	4.15	0.91
Determining, the nature of the predicted environmental changes				10	4.12	0.78
Identifying the types of activities that are expected to follow from the implementation of the P/P				11	4.09	0.77
Identifying reasonable development options and alternative proposals that meet the needs addressed by the P/P and are more sustainable				12	4.09	0.77
Relating relevant international, national and local plans, objectives and environmental standards (existing & emerging) to the P/P				13	4.03	0.95
Producing a documented statement demonstrating how the "Environmental Report" and any consultations were taken into account in the decision-making process				14	4.03	0.92
Informing the public of the results of the screening process and the rationale behind the decision				15	4.00	1.03
Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive				16	3.97	0.73
Developing monitoring/follow-up arrangements for the significant environmental affects of the P/P & its alternatives				17	3.94	0.66
Informing stakeholders about the key parts of the P/P, the key environmental issues, and the P/P alternatives				18	3.91	0.88
Establishing the risk of environmental standards being breached by measures in the P/P (and its alternatives)				19	3.88	0.96
Establishing the preferred P/P based upon environmental grounds (including the Do-Nothing alternative)				20	3.88	0.78
Performing an internal (i.e. by SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report				21	3.88	0.96
Consulting with the Public to access local knowledge and values concerning the possible effects of the P/P				22	3.85	0.87
Developing draft environmental objectives, indicators, and targets to allow the evaluation of environmental impacts of P/P				23	3.82	0.68
Determining if the predicted changes will affect environmental resources which, although not legally protected, are important or valuable.				24	3.82	0.64
Predicting the environmental changes resulting from the implementation of the P/P or its alternatives				25	3.79	0.89
Providing Stakeholders with the information identified in Annex I of the SEA Directive (The "Environmental Report" or so called "SEA Report")				26	3.76	0.90
Revising the monitoring/follow-up arrangements periodically (so that they take account of new methods/increased understanding of the baseline environment)				27	3.76	0.66
Establishing whether or not the P/P provides a framework for development consent for projects listed in the EIA Directive				28	3.73	0.84
Identifying if predicted changes can lead to failure to achieve environmental policies or targets				29	3.67	0.99
Establishing if the P/P determines the use of small areas of land at a local scale only AND/OR the P/P is a minor modification of an existing P/P				30	3.61	1.06
Performing an external (independent of the SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report				31	3.55	1.25
Reporting, periodically, to stakeholders on the results of monitoring the significant environmental impacts				32	3.52	0.80
Consulting at the screening stage with the public to determine their views on environmental-issues associated with the P/P				33	3.33	0.99

Irish local authority forward planners rated all but one SEA competency as of "considerable importance" with the specific competency "Consulting at the screening stage with the public to determine their views on environmental issues associated with the plan/programme" as of "moderate importance". This confirms the relevance of the competencies to Irish local authority practice; none of the 33 SEA competencies were rated as "absolutely important" to a quality SEA which indicates some misunderstanding as most of the SEA tasks employed are legal requirements of the SEA Directive.

We can construct a composite "Level of Importance" mean using all 33 competencies for which we get:

Number of items	=	33
Composite Mean	=	3.95 "Considerable Importance"
95% Confidence Interval for Composite Mean	=	0.09
Standard Deviation	=	0.25
Hi	=	4.39
Low	=	3.33

4.2.3 Summary for "PREPAREDNESS LEVEL"

Table 4.9 DESCRIPTIVE ANALYSIS OF LEVEL OF PREPAREDNESS

Absolute Preparedness 4.5 or over	Considerable Preparedness 3.5 or over	Moderate Preparedness 2.5 to 3.49	None to Little Preparedness 0 to 2.49

Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive	1	3.58	0.83
Establishing whether or not the P/P provides a framework for development consent for projects listed in the EIA Directive	2	3.09	0.80
Consulting with the designated environmental authorities (scoping)	3	3.09	1.01
Consulting with the environmental authorities (screening)	4	2.97	0.81
Determining if the P/P is likely to have a significant effect on a Natura 2000 site	5	2.91	0.88
Informing the public of the results of the screening process and the rationale behind the decision	6	2.88	0.86
Establishing if the P/P determines the use of small areas of land at a local scale only AND/OR the P/P is a minor modification of an existing P/P	7	2.85	0.80
Identifying the types of activities that are expected to follow from the implementation of the P/P	8	2.85	0.83
Determining the key elements of the P/P to be assessed	9	2.82	0.64
Consulting at the screening stage with the public to determine their views on environmental-issues associated with the P/P	10	2.76	0.83
Informing stakeholders about the key parts of the P/P, the key environmental issues, and the P/P alternatives	11	2.76	0.94
Relating relevant international, national and local plans, objectives and environmental standards (existing & emerging) to the P/P	12	2.64	1.11
Determining if the P/P is likely to result in environmental-impacts of such a nature that it should be taken forward for SEA?	13	2.61	0.83
Identifying the environmental issues to be assessed	14	2.61	0.79
Developing draft environmental objectives, indicators, and targets to allow the evaluation of environmental impacts of P/P	15	2.58	0.83
Consulting with the Public to access local knowledge and values concerning the possible effects of the P/P	16	2.55	0.90
Identifying reasonable development options and alternative proposals that meet the needs addressed by the P/P and are more sustainable	17	2.54	0.90
Performing an internal (i.e. by SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	18	2.48	0.79
Determining, the nature of the predicted environmental changes	19	2.45	0.75
Identifying how each alternative P/P can be revised/refined to mitigate significant adverse effects & maximise any benefits offered by the P/P	20	2.42	0.71
Providing Stakeholders with the information identified in Annex I of the SEA Directive (The "Environmental Report" or so called "SEA Report")	21	2.40	0.97
Determining if predicted changes will affect environmental resources which are protected by laws/policies	22	2.39	0.83
Developing monitoring/follow-up arrangements for the significant environmental affects of the P/P & its alternatives	23	2.39	0.70
Revising the monitoring/follow-up arrangements periodically (so that they take account of new methods/increased understanding of the baseline environment)	24	2.39	0.79
Obtaining an understanding of the existing state of the environment	25	2.33	0.60
Establishing the preferred P/P based upon environmental grounds (including the Do-Nothing alternative)	26	2.33	0.82
Determining if the predicted changes will affect environmental resources which, although not legally protected, are important or valuable.	27	2.30	0.73
Predicting the environmental changes resulting from the implementation of the P/P or its alternatives	28	2.27	0.76
Identifying if predicted changes can lead to failure to achieve environmental policies or targets	29	2.27	0.67
Establishing the risk of environmental standards being breached by measures in the P/P (and its alternatives)	30	2.24	0.61
Producing a documented statement demonstrating how the "Environmental Report" and any consultations were taken into account in the decision-making process	31	2.21	0.78
Performing an external (independent of the SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	32	2.09	0.77
Reporting, periodically, to stakeholders on the results of monitoring the significant environmental impacts	33	1.97	0.68

The scale used enabled local authority forward planners to score the level of preparation according to whether they perceived that they were 'Absolutely Prepared' (5), 'Considerably Prepared' (4), 'Moderately Prepared' (3), 'Little Prepared' (2) or 'Not Prepared' (1). Results indicated that these forward planners did not consider they were absolutely prepared to carry out any of the 33 SEA competencies. Furthermore, on only one competency, that of 'Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive', did the forward planners consider they were considerably prepared. All of the other competencies were divided evenly into two sets of 16 competencies each: those 16 competencies relative to which the forward planners considered that they were only moderately prepared to prosecute, and those final 16 competencies for which the planners considered they had little to no preparation.

It is interesting to note that for all the competencies that relate to consultation, all save one, "Reporting periodically to stakeholders on the results of monitoring..." appear in the 'moderately prepared for' category; the aforementioned consultation competency is last of all the competencies when ranked according to the level of preparedness of local authority planners.

We can construct a composite "Level of Preparation" mean using all 33 competencies for which we get:

Number of items	=	33
Composite Mean	=	2.58
95% Confidence Interval for Composite Mean	=	0.12
Standard Deviation	=	0.33
Hi	=	3.58
Low	=	1.96

4.2.4 Reality of Scoring Difference

This section presents the results that answer the question of whether or not the differences in the respondent's mean scores of "Importance" and "Educational Preparedness" for competencies are significant.

Table 4.10: Aspects of the use of the matched-pair t-test employed in this study

SEA Competencies	I mean	P mean	difference	t-value
Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive	3.97	3.58	0.39	2.34
Establishing whether or not the P/P provides a framework for development consent for projects listed in the EIA Directive	3.73	3.09	0.64	3.46
Establishing if the P/P determines the use of small areas of land at a local scale only AND/OR the P/P is a minor modification of an existing P/P	3.61	2.85	0.76	4.65
Consulting with the environmental authorities	4.27	2.97	1.30	8.47
Determining if the P/P is likely to have a significant effect on a Natura 2000 site	4.15	2.91	1.24	7.91
Determining if the P/P is likely to reslt in e-impacts of sch a natre that it shold be taken forward for SEA?	4.18	2.61	1.58	10.03
Conslting at the screening stage with the pblic to determine their views on an e-isses asssociated with the p/p	3.33	2.76	0.58	3.12
Informing the pblic of the reslts of the screening process and the rational behind the decision	4.00	2.88	1.12	4.57
Determining the key elements of the P/P to be assessed	4.36	2.82	1.55	10.21
Identifying the types of activities that are expected to follow from the implementation of the P/P	4.09	2.85	1.24	7.36
Consulting with the Public to access local knowledge and values concerning the possible effects of the P/P	3.85	2.55	1.30	5.93
Consulting with the designated environmental authorities	4.24	3.09	1.15	5.63
Identifying the environmental issues to be assessed	4.39	2.61	1.79	11.08
Relating relevant international, national and local plans, objectives and environmental standards (existing & emerging) to the P/P	4.03	2.64	1.39	6.84
Developing draft environmental objectives, indicators, and targets to allow the evaluation of environmental impacts of P/P	3.82	2.58	1.24	6.92
Identifying reasonable development options and alternative proposals that meet the needs addressed by the P/P and are more sustainable	4.09	2.55	1.55	7.56
Informing stakeholders about the key parts of the P/P, the key environmental issues, and the P/P alternatives	3.91	2.76	1.15	7.30
Obtaining an understanding of the existing state of the environment	4.18	2.33	1.85	12.20
Predicting the environmental changes resulting from the implementation of the P/P or its alternatives	3.79	2.27	1.52	7.24
Determining, the nature of the predicted environmental changes	4.12	2.45	1.67	9.38
Establishing the risk of environmental standards being breached by measures in the P/P (and its alternatives)	3.88	2.24	1.64	10.94
Identifying if predicted changes can lead to failure to achieve environmental policies or targets	3.67	2.27	1.39	8.02
Determining if predicted changes will affect environmental resources which are protected by laws/policies	4.27	2.39	1.88	13.82
Determining if the predicted changes will affect environmental resources which, although not legally protected, are important or valuable.	3.82	2.30	1.52	10.94
Identifying how each alternative P/P can be revised/refined to mitigate significant adverse effects & maximise any benefits offered by the P/P	4.15	2.45	1.70	10.25
Developing monitoring/follow-up arrangements for the significant environmental affects of the P/P & its alternatives	3.94	2.39	1.55	9.14
Establishing the preferred P/P based upon environmental grounds (including the Do-Nothing alternative)	3.88	2.33	1.55	9.81
Providing Stakeholders with the information identified in Annex I of the SEA Directive (The "Environmental Report" or so called "SEA Report")	3.76	2.45	1.30	8.15
Performing an internal (i.e. by SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	3.88	2.55	1.33	7.50
Performing an external (independent of the SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	3.55	2.09	1.45	6.81
Producing a documented statement demonstrating how the "Environmental Report" and any consultations were taken into account in the decision-making process	4.03	2.21	1.82	9.47
Revising the monitoring/follow-up arrangements periodically (so that they take account of new methods/increased understanding of the baseline environment)	3.76	2.39	1.36	8.14
Reporting, periodically, to stakeholders on the results of monitoring the significant environmental impacts	3.52	1.97	1.55	8.13

Table 4.10 clearly shows the differences between the mean perceived level of importance and mean perceived level of educational preparedness for each competency. The results show that significant differences exist between the means of the level of competency importance, and that of level of preparation – the null hypothesis is rejected as false at this level of confidence.

4.2.6 Efficacy of information/training intervention to date

In order to avoid cumbersome sets of tables and to enhance presentation, the following series of analysis identifies only those competencies that prove to be the exception to the general rule that "no statistically significant difference exists between groups within each category". Consequently only those competencies that prove statistically significant between the groups on either competency means or preparation means are identified.

Analysis of variance for Importance Scorings:

With the exception of the three SEA competencies listed below with their ANOVA data included, training/information interventions to date have had no effect on the importance ratings of the forward planners:

"Consulting at the screening stage with the public to determine their views on any environmental-issues associated with the P/P"

Table 4.11: ANOVA results

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
methodologies	10.00	38.00	3.80	0.62
guidance	12.00	43.00	3.58	0.27
awareness	3.00	10.00	3.33	0.33
none	6.00	14.00	2.33	1.47

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	8.84	3.00	2.95	4.82	0.01	2.96
Within Groups	16.52	27.00	0.61			
Total	25.35	30.00				

With greater exposure to SEA process information/training, a correspondingly greater importance is attached to consulting with the public at the screening stage. It is interesting to note the extent of the change from "None to Little

Importance" to "Considerable Importance" when forward planners were trained in SEA methodologies.

"Developing monitoring/follow-up arrangements for the significant environmental affects of the P/P & its alternatives"

Table 4.12: ANOVA results

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
methodologies	10.00	35.00	3.50	0.50
guidance	12.00	49.00	4.08	0.08
awareness	3.00	12.00	4.00	1.00
none	6.00	27.00	4.50	0.30

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.05	3.00	1.35	4.09	0.02	2.96
Within Groups	8.92	27.00	0.33			
Total	12.97	30.00				

The provision of follow-up arrangements is given a lower importance rating with greater exposure to training/information; this may be attributable to a greater understanding of the issues involved for these follow-up arrangements and a consequent reduction in anxiety about the issues, given that the issue of follow-up arrangements is not part of the traditional EIA process.

"Producing a documented statement demonstrating how the "Environmental Report" and any consultations were taken into account in the decision-making process"

Table 4.13: ANOVA results

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
methodologies	10.00	38.00	3.80	0.40
guidance	12.00	56.00	4.67	0.24
awareness	3.00	12.00	4.00	1.00
none	6.00	22.00	3.67	1.47

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	5.88	3.00	1.96	3.39	0.03	2.96
Within Groups	15.60	27.00	0.58			
Total	21.48	30.00				

The importance score for the production of the Environmental Report gains a greater value with exposure to SEA information/training, which would seem a logical variation given the intrinsic importance of communicating the assessment process to the affected parties.

Analysis of variance for Preparedness Scorings:

Except for the four SEA competencies listed below, presented with their ANOVA data, training/information interventions to date have had no effect of the preparedness ratings of the forward planners.

"Consulting at the screening stage with the public to determine their views on any environmental-issues associated with the p/p"

Table 4.14: ANOVA results

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
methodologies	10.00	32.00	3.20	0.40
guidance	12.00	35.00	2.92	0.63
awareness	3.00	8.00	2.67	0.33
none	8.00	16.00	2.00	0.57

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	6.88	3.00	2.29	4.38	0.01	2.93
Within Groups	15.18	29.00	0.52			
Total	22.06	32.00				

"Consulting with the designated environmental authorities"

Table 4.15: ANOVA results

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
methodologies	10.00	32.00	3.20	0.84
guidance	12.00	42.00	3.50	0.82
awareness	3.00	10.00	3.33	2.33
none	8.00	18.00	2.25	0.50

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	7.96	3.00	2.65	3.11	0.04	2.93
Within Groups	24.77	29.00	0.85			
Total	32.73	32.00				

"Relating relevant international, national and local plans, objectives and environmental standards (existing & emerging) to the P/P"

Table 4.16: ANOVA results

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
methodologies	10.00	30.00	3.00	0.89
guidance	12.00	34.00	2.83	0.70
awareness	3.00	10.00	3.33	4.33
none	8.00	13.00	1.63	0.55

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	11.43	3.00	3.81	3.92	0.02	2.93
Within Groups	28.21	29.00	0.97			
Total	39.64	32.00				

"Informing stakeholders about the key parts of the P/P, the key environmental issues, and the P/P alternatives"

Table 4.17: ANOVA results

Anova: Single Factor

SUMMARY

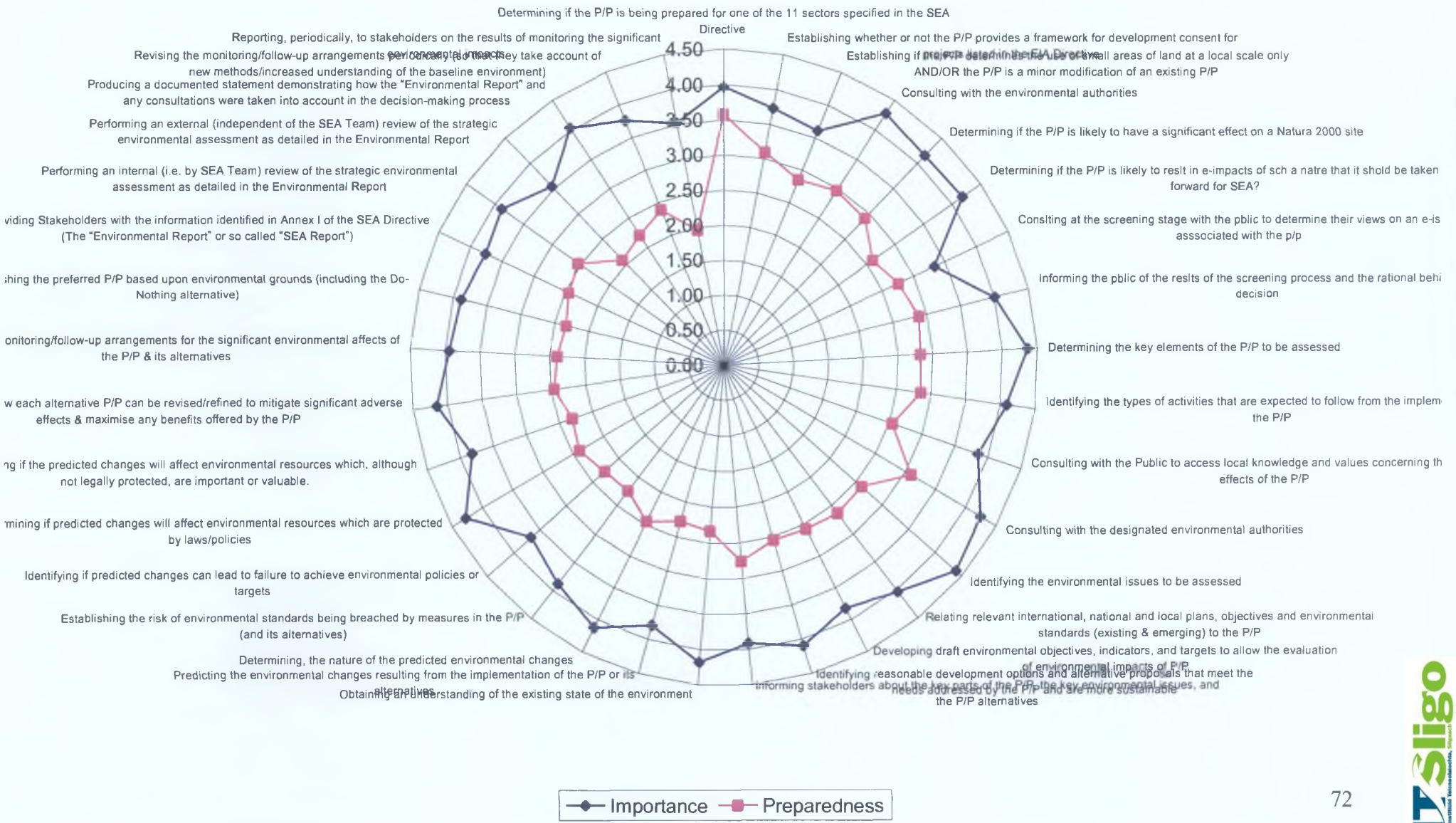
Groups	Count	Sum	Average	Variance
methodologies	10.00	29.00	2.90	1.43
guidance	12.00	38.00	3.17	0.33
awareness	3.00	9.00	3.00	1.00
none	8.00	15.00	1.88	0.13

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	8.62	3.00	2.87	4.29	0.01	2.93
Within Groups	19.44	29.00	0.67			
Total	28.06	32.00				

The preparedness score for each of these four SEA tasks, increased with exposure to SEA information/training. The interesting point is that for the remaining twenty-nine, the information/training interventions to date have had no significant effect on level of preparedness. There is much to be done if SEA capacity deficits are to be addressed in the Irish local authorities. Given that the first survey indicated that 76% of Irish Local Authorities are planning to employ external consultants to comply with the requirements of the Directive, it must be insured that it is performed as an "in-house" consultancy and intimately involves those relevant forward planners so that hands-on experience is developed.

Figure 4.7: Visual comparison of the level of importance and the level of preparation for the SEA tasks



CHAPTER FIVE

CONCLUSIONS

Chapter 5

CONCLUSIONS

5.1 INTRODUCTION

The aims of the present study were (1) to establish the readiness of Irish Local Authorities to meet the requirements of the recently transposed SEA directive, (2) to establish how well local authority forward planners considered they were prepared to perform a given set of SEA competencies, and (3) to establish the effectiveness of SEA educational interventions at the local authority forward planner level to date.

5.2 CONCLUSIONS AND RECOMMENDATIONS

To what extent are Irish local authorities prepared to meet the requirements of the SEA Directive?

The results of the first survey show that the responding local authorities consider that they have achieved only moderate progress in making staff aware of SEA requirements. There is little to no progress in identifying/allocating resources for SEA implementation, providing/using SEA information, and addressing those SEA aspects not covered in traditional EIA. On the positive side, 50% of local authorities report the capability to perform SEA in-house; however, most (76%) intend to employ consultants to help meet the formal SEA requirements. The results show that a majority (70%) know of SEA training courses, with a similar percentage of local authorities likely to engage in such training. No difference in progress rating was discerned relative to which regional authority the local authority has membership.

The second survey supported these views save for the expressed opinion that 50% of local authorities have the "in-house" capability to meet the requirements. At the individual planner level, there is a poor level of expressed capacity to perform SEA tasks (composite average of 2.59 out of 5; standard deviation of

IT Sligo

0.33). None of the SEA tasks is scored as "absolutely important" even though they include legal necessities.

Recommendation 1:

Some resistance should be shown to the desire of local authorities to employ external consultants to facilitate compliance with the requirements of the SEA Directive. Given the importance of the SEA process affecting the plan-making process, the consideration of 50% of local authorities that they had the in-house capability to perform SEA should be built upon (although this 50% figure is called into doubt when considered with the survey at the individual planner level).

The need to collect and store appropriate data with which to conduct the SEA process is vitally important to a successful outcome; hence the "little to no" progress in providing/using SEA information is of concern and should be addressed. A process of data collation needs to be organised to prevent a duplication of work and to aid the prosecution of SEA.

How well do local authority forward planners consider they are currently prepared to perform a given set of SEA competencies?

Results indicate that local authority forward planners only consider themselves considerably prepared for one SEA task: 'Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive'. 16 of the remaining tasks, which include all but one of the consultation competencies, are then held to be moderately prepared for, whilst the remaining 16 have had little to no preparation. The gaps in the importance of each SEA task and the planner's preparedness for same were all adjudged statistically significant.

Recommendation 2:

Given that consultation competencies and administrative competencies were all considered to be at least moderately prepared for, training intervention

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should stress the more technical skills such as the consideration of alternatives and the development of monitoring/follow-up arrangements.

What is the extent of the effectiveness of SEA educational interventions at the local authority forward planner level to date?

Only seven (three for Importance Level and four for Preparedness Level) statistically significant improvements occurred due to training/information interventions to date on the scoring of the SEA tasks by the forward planners. Given that the various interventions ranged from general awareness raising through to instruction in SEA methodologies, perhaps it will only be from engaging in a real SEA process that competency will be developed. Relating this to the expressed opinion that 76% of local authorities will be employing external consultants, such consultation should emphasize forward planner involvement,

5.3 FUTURE RESEARCH

1. This study has focused on forward planners at Irish Local Authorities. Research into the needs of other stakeholders in Irish SEA may yield dividends for the successful prosecution of environmental assessment at the strategic level, and provide more understanding of continuing professional development needs.
2. Given the findings in the current research where strategic planners have assessed their current preparedness as only "adequately prepared", further research could explore how the gap between "adequately prepared" and "very well prepared" could be bridged.

5.4 CONTRIBUTION OF THIS RESEARCH

Key contributions of this work include:

1. Replication of research by IEMA in an Irish Context
2. Methodological contribution of transposing a research technique from the domain of hospitality management to the field of SEA performance capacity

measurement.; this methodology could be used as a "ruler" to gauge future development of SEA performance competency going forward (perhaps by the Department of Environment in future capacity building programmes).

3. Validation of the Scott & Marsden SEA tasks as of Moderate to Considerable importance to local authority forward planners and their established rankings (importance level and preparedness)

BIBLIOGRAPHY

Bibliography

Ashworth, P.D., Saxton, J. (1990). "On competence", *Journal of Further and Higher Education,* 14, 3-25.

Bell, J. (1987), "*Doing your Research Project: A guide For First Time Researchers in Education and Social Science*", Open University Press. Milton Keynes and Philadelphia:

Bonde, J. & Cherp, A. (2000) Quality review package for strategic environmental assessments of land-use plans. Impact Assessment and Project Appraisal, Vol. 16

Boyatzis, R. (1982). "The Competent Manager – A Model for Effective Performance" John Wiley & Sons, New York, NY.

Brackstone, G., (1999). "Managing Data Quality in a Statistical Agency", Statistics Canada, Survey Methodology, Catalogue No 12-001-XPB, 25:2.

Brown A and Therivel R (2000) Principles to Guide the Development of Strategic Environmental Assessment Methodology. *Impact Assessment and Project Appraisal,* 18(3): 183-190.

Buttle, F. (1986). "Hotel and Food Service Marketing". Cassel. London.

Burgoyne, J., (1993) "The competence movement: issues, stakeholders and prospects" *Personnel Review*, 22:6, 6-13..

Cook, S., (2005) "Learning Needs Analysis" Training Journal, Jan 2005.

Cox, E. P. (1979). "Marketing Research – Information for Decision Making", Harper & Row. New York.

Dalal-Clayton B., Sadler B. (1998), "The Application of Strategic Environmental Assessment in Developing Countries, draft report, IIED, London.

Dalal-Clayton B., Sadler B. (2005), "Strategic Environmental Assessment; A Sourcebook & Reference Guide to International Experience", Earthscan Publications Ltd, 2005

Emilsson, S,, et al/ (2004), "Potential Benefits of Combining Environmental Management Tools in a Local Authority Context", Journal of Environmental Assessment Policy and Management, 6:2, 131-151.

Enterprise Ireland (2005) website: http/www.envirocentre.ie/news

Environmental Protection Agency, (2004). "Ireland's State of the Environment Report 2004"

Garavan, T.N. & McGuire, D. (2001). "Competencies & workplace learning: some reflections on the rhetoric & the reality", *Journal of Workplace Learning,* 13:4.

Hayes, J. et al. (2000). "Senior managers perceptions of the competencies they require for effective performance: implications for training and development", Personnel Review, Vol. 20 No. 1.

Heffernan, M.M., Flood, P.C. " An exploration of the relationship between the adoption of managerial competencies, organisational characteristics, human

resource sophistication and performance in Irish organisations", *Journal of European Industrial Training* 24:2/3/4, 128-139.

Hussey, J., Hussey, R. (1997) "Business Research: A practical guide for Undergraduate and Postgraduate students", Macmillan Press, Hampshire and London.

IAIA International Association for Impact Assessment (2002) Strategic environmental assessment performance criteria. IAIA Special Publication Series, No. 1

Institute of Environmental Management & Assessment (2003), "Strategic Environmental Assessment", Report of the SEA Workshop, London, 5th November 2003.

James, E., McCall, V, "Strategic Environmental Assessment – are you ready?". The Environmentalist, October 2003.

Lucas, R., (1999). Survey Research in: Brotherton, B. Ed. "The Handbook of Contemporary Research", Wiley & Sons. London.

Noble, B., (2003). "Auditing Strategic Environmental Assessment Practice in Canada", Journal of Environmental Assessment Policy and Management, 5:2, 127-147

Opperman, M. (1995) E-Mail Surveys--Potentials and Pitfalls. *Marketing Research, 7* (3), 29-33.

Pettit, C., Simmons, S. "Strategic Environmental Assessment – are local authorities ready?", The Environmentalist, December 2003.

Partidario M (1999) Strategic Environmental Assessment - Principles and Potential. In Petts J (ed.) *Handbook of Environmental Impact Assessment* (Vol. 1, pp.60-73). Blackwell Science Ltd, London.

Partidario M (2004) in World Bank, SEPA, IAIA, (2004), Strategic Environmental Assessment (SEA), A Distance Learning Course for China.

Pizam, A. (1994). "Planning a tourism research investigation", in Ritchie, J.R.B. & Goeldner, C.R. (eds.) "Travel, Tourism, and Hospitality Research: A Handbook for Managers and Researchers". John Wiley & Sons Inc: New York.

Royal Town & Planning Institute (2004), RTPI South West Conference Programme

Sadler B (2001) A Framework Approach to Strategic Environmental Assessment: Aims, Principles and Elements of Good Practice. In Dusik J (ed) *Proceedings of International Workshop on Public Participation and Health Aspects of Strategic Environmental Assessment in the UN/ECE Region* (pp. 11-24). Regional Environmental Centre for Central and Eastern Europe, UNECE, WHO Europe, Szentendre, Hungary.

Sadler B and Verheem R (1996) *Strategic Environmental Assessment: Status, Challenges and Future Directions.* Ministry of Housing, Spatial Planning and the Environment, The Hague.

Sandwith, P., (1993). "A hierarchy of management training requirements: The Competency domain model", Public Personnel Management, 22:1, 43-62.

Scott, P., and Marsden, P., (2003) "Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland", ISBN:1-84095-124-9

Scrase, I., (2004), "Strategic Environmental Assessment (SEA)", Postnote, Parliamentary Office of Science and Technology, July 2004 Number 223

Sekaran, U. (2003). "Research Methods for Business: A Skill Building Approach", 4th Ed., John Wiley & Sons, Inc, United States.

Tas, R. (1998). "Teaching future managers", The Cornell Hotel and Restaurant Administration Quarterly, Vol 29:2.

Therivel R, Wilson E, Thompson S, Heaney D and Pritchard D (1992) *Strategic Environmental Assessment*. Earthscan, London.

UNEP (2002), Environmental Impact Assessmnet Training Resource Manual, Second Edition.

Wallace, R.S.O., Mellor, C.J., (1998) "Non Response bias in mail accounting surveys: A pedagogical note", British Accounting Review, 20.

World Bank, SEPA, IAIA, (2004), Strategic Environmental Assessment (SEA), A Distance Learning Course for China.

APPENDIX ONE

ITSligo
An Institiúid Teicneolaíochta, Shligeach

INSTITUTE OF TECHNOLOGY, SLIGO

Institiúid Teicneolaíochta, Sligeach

SLIGEACH

Confidential Survey

Strategic Environmental Assessment of Plans/Programmes – The Views of Irish Local Authorities

WICKLOW COUNTY COUNCIL
19 MAY 2005
CORPORATE AFFAIRS

Dear Participant,

I am currently pursuing a Master of Science in Environmental, Safety & Health Management at the Sligo Institute of Technology. One of my research concerns is the status of the Strategic Environmental Assessment (SEA) process in local authorities in the republic of Ireland.

The Questionnaire on the other side of this sheet should take about 10 minutes to complete; there are just 3 response sections. Please answer the questions in the spaces provided. When you have completed the questionnaire please return it to me in the enclosed stamped address envelope before 10th June 2005.

ALL THE INFORMATION YOU PROVIDE WILL BE TREATED IN THE STRICTIST CONFIDENCE & ONLY GROUP DATA WILL BE PRESENTED.

I hope you find completing the questionnaire interesting and thank you for taking the time to help me. If you have any queries or would like further information about this survey please contact me at 074 97 41226

Sincerely

PLANNING DEPT.
RECEIVED
19 MAY 2005

Cormac Murphy,
Loughfad, Portnoo,
County Donegal
cmurphy@tck.ie

1 Please tick the appropriate box to indicate a YES/NO answer to the following questions:

	YES	NO
Has your organisation carried out any preparation for Strategic Environmental Assessment (SEA)?	☐	☒
If "Yes", what preparations have been carried out:		
Do you have in-house capability to undertake SEA?	☐	☒
Are you aware of any training courses on SEA that could help staff develop in-house capabilities?	☒	☐
If "Yes", please specify course title and provider:		
Will you employ external consultants to undertake a SEA?	☒	☐
Has the Local Authority sent (or are planning to send) any employees on an SEA training course?	☒	☐
If "Yes", please specify course title and provider: DOEHG SEMINAR FOR REGIONAL & PLANNING AUTHORITIES ENNISCORTHY LTO Feb 2005		
Has a financial cost estimate been calculated with regards to the implementation and undertaking of SEAs?	☐	☒
If "Yes", please provide the information; if "No" please estimate costs.		

2 Please provide an estimate for the amount of time you expect a SEA will take (in number of staff days per year):

_____ or Don't Know ☒

How many people work in your Local Authority's planning section? ±30 STAFF

Please list the plans/programmes you think the SEA Directive will apply to within your local authority, & state the revision date of these plans (if known)?

LOCAL AREA PLANS
VARIATION TO EXISTING PLANS & COUNTY DEVELOPMENT PLAN
WMD STRATEGY

3 Please rate the LEVEL OF PROGRESS TO DATE your organisation has achieved for the following actions: **(SCALE: 1=None so far, 2=Little, 3=Moderate, 4=Good, 5=Excellent)**

Making your staff aware of the requirements of SEA	① ② ☒ ④ ⑤
Identifying/Allocating resources for the implementation of SEA	① ② ☒ ④ ⑤
Addressing the implications of the SEA Directive with respect to your role in data/information provision	① ☒ ③ ④ ⑤
Addressing the implications of the SEA Directive with respect to your role in data/information use	① ☒ ③ ④ ⑤
Considering how to streamline other processes through the implementation of SEA	① ☒ ③ ④ ⑤
Addressing the aspects required by the SEA Directive which are not traditionally covered by environmental impact assessment	① ☒ ③ ④ ⑤

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APPENDIX TWO

Survey of Stakeholders' Views

Strategic Environmental Assessment (SEA) Process

This Questionnaire is about YOUR INDIVIDUAL VIEWS on the strategic environmental process - what tasks you think are **important** and **to what extent training would need to be provided** to enable your performance of SEA tasks for a Plan or Programme (written as "**P/P**").

There are two short sections to the questionnaire. It should take about 15 minutes to complete the questionnaire.

Please **left-click** the shaded boxes to make your choice of answer. When you are finished, please save this document and send it as an email attachment to my email address given below.

ALL THE INFORMATION YOU PROVIDE WILL BE TREATED IN THE STRICTEST CONFIDENCE & ONLY GROUP DATA WILL BE PRESENTED IN MY THESIS. If you prefer you can print off the completed questionnaire and mail it to the address below.

I hope you find completing the questionnaire interesting and thank you for taking the time in your busy schedule to help me achieve my degree. I will supply all respondents with a summary of the results.

If you have any queries or would like further information about this survey please contact me at 074 97 41226 or email me at **cmurphy@tck.ie**

Sincerely

Cormac Murphy,

Loughfad, Portnoo,

County Donegal

INSTITUTE OF TECHNOLOGY, SLIGO

Institiúid Teicneolaíochta, Sligeach

Section 1: About You

1. Level of planning-related qualification held? None

2. Level of Non planning-related qualification held? None

3. Number of Years Since Graduation? 1-2

4. Do you consider that the SEA process will effectively influence the plan/programme decision process and the ultimate decision outcome? No

5. Do you intend becoming proficient in the prosecution of the SEA process? No

6. What sectors do your organisation's Plans & Programmes cover? (you can tick multiple boxes)

Agriculture ☐	Forestry ☐	Fisheries ☐	Energy ☐	Industry ☐
Transport ☐	Waste Mgt. ☐	Telecommunications ☐	Tourism ☐	Land Use ☐

7. What forms of SEA training/awareness-raising programme has the organisation provided to you?

Use of SEA methodologies & preparation of SEA Reports ☐	General Awareness-raising programme ☐	Provision of guidance documentation ☐	None ☐

Section 2: Your views

In the two columns, please score each of the 33 tasks in turn by left-clicking the shaded boxes and selecting your rating according to YOUR VIEW of its *importance* ("I") to the performance to a quality SEA and of your *current preparedness* ("P") to perform the task.

The Scale for each column is: 1=None. 2=Little. 3=Moderate. 4=Considerable. 5=Absolutely

	Screening – Must a P/P undergo a strategic environmental assessment?	I	P
1	Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive	1	1
2	Establishing whether or not the P/P provides a framework for development consent for projects listed in the EIA Directive	1	1
3	Establishing if the P/P determines the use of small areas of land at a local scale only AND/OR the P/P is a minor modification of an existing P/P	1	1
4	Consulting with the environmental authorities	1	1
5	Determining if the P/P is likely to have a significant effect on a Natura 2000 site	1	1
6	Determining if the P/P is likely to result in environmental impacts of such a nature that it should be taken forward for SEA; i.e. on the basis of probability, duration, reversibility, magnitude, etc of possible impacts)	1	1
7	Consulting, at the screening stage, with the Public to determine their views on any environmental issues associated with the P/P.	1	1
8	Informing the Public of the results of the screening process and the rational behind the screening decision	1	1

Scoping – What environmental issues need to be addressed in the assessment?		I	P
9	Determining the key elements of the P/P to be assessed	1	1
10	Identifying the types of activities that are expected to follow from the implementation of the P/P	1	1
11	Consulting with the Public to access local knowledge and values concerning the possible effects of the P/P	1	1
12	Consulting with the designated environmental authorities	1	1
13	Identifying the environmental issues to be assessed	1	1
14	Relating relevant international, national and local plans, objectives and environmental standards (existing & emerging) to the P/P	1	1
15	Developing draft environmental objectives, indicators, and targets to allow the evaluation of environmental impacts of P/P	1	1
16	Identifying reasonable development options and alternative proposals that meet the needs addressed by the P/P and are more sustainable	1	1
17	Informing stakeholders about the key parts of the P/P, the key environmental issues, and the P/P alternatives	1	1

Impact Management – Identification, Prediction, Evaluation & Mitigation of Impacts		I	P
18	Obtaining an understanding of the existing state of the environment (relative to environmental aspects that may be affected by the P/P & its alternatives)	1	1
19	Predicting the environmental changes resulting from the implementation of the P/P or its alternatives	1	1
20	Determining, the nature of the predicted environmental changes (i.e. probability, spatial extent, magnitude, duration, reversibility, cumulative nature)	1	1
21	Establishing the risk of environmental standards being breached by measures in the P/P (and its alternatives)	1	1
22	Identifying if predicted changes can lead to failure to achieve environmental policies or targets	1	1
23	Determining if predicted changes will affect environmental resources which are protected by laws/policies	1	1
24	Determining if the predicted changes will affect environmental resources which, although not legally protected, are important or valuable.	1	1
25	Identifying how each alternative P/P can be revised/refined to mitigate significant adverse effects & maximise any benefits offered by the P/P	1	1
26	Developing monitoring/follow-up arrangements for the significant environmental affects of the P/P & its alternatives	1	1
27	Establishing the preferred P/P based upon environmental grounds (including the Do-Nothing alternative)	1	1
28	Providing Stakeholders with the information identified in Annex I of the SEA Directive (The "Environmental Report" or so called "SEA Report")	1	1
29	Performing an internal (i.e. by SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	1	1
30	Performing an external (independent of the SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	1	1

Post Assessment Activities – including monitoring		I	P
31	Producing a documented statement demonstrating how the "Environmental Report" and any consultations were taken into account in the decision-making process	1	1
32	Revising the monitoring/follow-up arrangements periodically (so that they take account of new methods/increased understanding of the baseline environment)	1	1
33	Reporting, periodically, to stakeholders on the results of monitoring the significant environmental impacts	1	1

The Survey is now complete.

Please save the file and send it as an email attachment to Cormac Murphy at: **cmurphy@tck.ie**

APPENDIX THREE

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	Border regional Authority						Dublin Regional Authority				Mid East Regional Authority			Midlands Regional Authority		
	Donegal	Sligo	Cavan	Leitrim	Louth	Monaghan	Dublin	Dun Laoire	Fingal	South Dub	Wicklow	Meath	Kildare	Laois	Longford	Offaly
Has your organisation carried out any preparation for SEA?	0		1		1		1				0	1		0	0	1
Do you have in-house capability to undertake SEA?	0		1		1		0				0	1		0	1	1
Are you aware of any training courses on SEA that could help develop in-house capabilities	1		1		0		1				1	1		1	0	0
Will you employ external consultants to undertake a SEA?	0		1		1		1				1	1		1	1	1
Has the LA sent (or are planning to send) any employees on an SEA training course?	0		1		1		1				0	1		1	0	0
Has a financial cost estimate been calculated with regards to the implementation and undertaking of SEAs?	0		0		0		1				0	1		0	0	0
Please provide an estimate for the amount of time you expect an SEA will take (in no. of staff days per year)	0		0		0		1							0	0	0
How many person years in your LA's planning section?	30		26		15		25				5	150		23	not given	not given
												40				
making your staff aware of the requirements of SEA	1		4		4		3				2	4		3	3	3
identifying/allocating resources for the implementation of SEA	1		3		2		3				0	3		3	1	2
addressing the implications of the SEA Directive w r t your role in information/data provision	2		0		1		3				2	3		3	2	3
addressing the implications of the SEA directive w r t your role in information/data use	2		2		1		3				2	3		3	2	3
considering how to streamline other processes through the implementation od SEA	1		3		1		3				2	3		3	2	3
addressing the aspects required by the SEA Directive which are not traditionally covered by an EIA	1		4		1		3				2	4		0	1	3

	Midwest Regional Authority				Southeast Regional Authority						Southwest Regional Authority			West Regional Authority			
Westmeath	Clare	North Tipp.	Limerick CoCo	Limerick City	Carlow	Kilkenny	South Tipp.	Waterford	Waterford City	Wexford	Cork CoCo	Kerry CoCo	Cork City	Galway City	Galway county	Roscommon	Mayo
1			1	1					1				0	0		0	0
1			1	1					0				1	1		0	0
1			1	1					1				1	0		1	0
1			0	0					1				1	0		1	1
1			1	1					1				1	0		1	1
0			0	0					0				0	0		0	0
0			0	0					0				0	0		0	0
20			12	10					10				20	64		9	22
4			4	4					3				3	3		2	2
2			2	3					2				1	2		1	1
4			3	4					2				1	2		1	1
4			3	4					2				1	3		1	1
3			3	3					2				1	3		1	1
1			3	4					2				1	2		1	1

ANOVA for First Survey on Interval Data

making your staff aware of the requirements of SEA

Border regional Authority	1		4	4
Dublin Regional Authority	3			
Mid East Regional Authority	2	4		
Midlands Regional Authority	5	3	2	4
Midwest Regional Authority			4	4
Southeast Regional Authority				3
Southwest Regional Authority			3	
West Regional Authority	3		2	2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Border regional Authority	3	9	3	3
Dublin Regional Authority	1	3	3	####
Mid East Regional Authority	2	6	3	2
Midlands Regional Authority	4	14	3.5	1.67
Midwest Regional Authority	2	8	4	0
Southeast Regional Authority	1	3	3	####
Southwest Regional Authority	1	3	3	####
West Regional Authority	3	7	2.3333333	0.33

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.0980392	7	0.5854342	0.39	0.89	3.29
Within Groups	13.666667	9	1.5185185			
Total	17.764706	16				

Identifying/allocating resources for the implementation of SEA

Border regional Authority	1		3	2
Dublin Regional Authority	3			
Mid East Regional Authority	2	3		
Midlands Regional Authority	3	1	2	2
Midwest Regional Authority			2	2
Southeast Regional Authority				2
Southwest Regional Authority			1	
West Regional Authority	2		1	1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Border regional Authority	3	6	2	1
Dublin Regional Authority	1	3	3	####
Mid East Regional Authority	2	5	2.5	0.5

Midlands Regional Authority	4	8	2	0.67
Midwest Regional Authority	2	4	2	0
Southeast Regional Authority	1	2	2	####
Southwest Regional Authority	1	1	1	####
West Regional Authority	3	4	1.3333333	0.33

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7745098	7	0.5392157	0.94	0.52	3.29
Within Groups	5.1666667	9	0.5740741			
Total	8.9411765	16				

addressing the implications of the SEA directive w.r.t your role in information/data provision

Border regional Authority	2		2	1
Dublin Regional Authority	3			
Mid East Regional Authority	2	2		
Midlands Regional Authority	3	2	2	4
Midwest Regional Authority			3	4
Southeast Regional Authority				2
Southwest Regional Authority			1	
West Regional Authority	2		1	1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Border regional Authority	3	5	1.6666667	0.33
Dublin Regional Authority	1	3	3	####
Mid East Regional Authority	2	4	2	0
Midlands Regional Authority	4	11	2.75	0.92
Midwest Regional Authority	2	7	3.5	0.5
Southeast Regional Authority	1	2	2	####
Southwest Regional Authority	1	1	1	####
West Regional Authority	3	4	1.3333333	0.33

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	9.8872549	7	1.412465	2.77	0.08	3.29
Within Groups	4.5833333	9	0.5092593			
Total	14.470588	16				

addressing the implications of the SEA directive w.r.t your role in information/data use

Border regional Authority	2		2	1
Dublin Regional Authority	3			
Mid East Regional Authority	2	2		
Midlands Regional Authority	3	2	2	4
Midwest Regional Authority			3	4

Southeast Regional Authority	2
Southwest Regional Authority	1
West Regional Authority	3 1 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Border regional Authority	3	5	1.6666667	0.33
Dublin Regional Authority	1	3	3	####
Mid East Regional Authority	2	4	2	0
Midlands Regional Authority	4	11	2.75	0.92
Midwest Regional Authority	2	7	3.5	0.5
Southeast Regional Authority	1	2	2	####
Southwest Regional Authority	1	1	1	####
West Regional Authority	3	5	1.6666667	1.33

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	8.4754902	7	1.2107843	1.66	0.24	3.29
Within Groups	6.5833333	9	0.7314815			
Total	15.058824	16				

considering how to streamline other processes throught the implementation od SEA

Border regional Authority	1 3 1
Dublin Regional Authority	2
Mid East Regional Authority	2 3
Midlands Regional Authority	2 2 2 2
Midwest Regional Authority	3 3
Southeast Regional Authority	2
Southwest Regional Authority	1
West Regional Authority	3 1 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Border regional Authority	3	5	1.6666667	1.33
Dublin Regional Authority	1	2	2	####
Mid East Regional Authority	2	5	2.5	0.5
Midlands Regional Authority	4	8	2	0
Midwest Regional Authority	2	6	3	0
Southeast Regional Authority	1	2	2	####
Southwest Regional Authority	1	1	1	####
West Regional Authority	3	5	1.6666667	1.33

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-*	*F*

					value	*crit*
Between Groups	4.1666667	7	0.5952381	0.92	0.53	3.29
Within Groups	5.8333333	9	0.6481481			
Total	10	16				

addressing the aspects required by the SEA Directive which are not traditionally covered by an EIA

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Border regional Authority	3	6	2	3
Dublin Regional Authority	1	3	3	####
Mid East Regional Authority	2	6	3	2
Midlands Regional Authority	4	6	1.5	0.33
Midwest Regional Authority	2	7	3.5	0.5
Southeast Regional Authority	1	2	2	####
Southwest Regional Authority	1	1	1	####
West Regional Authority	3	4	1.3333333	0.33

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	10.77451	7	1.5392157	1.36	0.33	3.29
Within Groups	10.166667	9	1.1296296			
Total	20.941176	16				

Survey 2 – Specific SEA Competencies T-Tests

Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.97	3.58
Variance	0.53	0.69
Observations	33.00	33.00
Pearson Correlation	0.24	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	2.34	
P(T<=t) one-tail	0.01	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.03	
t Critical two-tail	2.04	

Establishing whether or not the P/P provides a framework for development consent for projects listed in the EIA Directive

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.73	3.09
Variance	0.70	0.65
Observations	33.00	33.00
Pearson Correlation	0.18	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	3.46	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Establishing if the P/P determines the use of small areas of land at a local scale only AND/OR the P/P is a minor modification of an existing P/P

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.61	2.85
Variance	1.12	0.63
Observations	33.00	33.00
Pearson Correlation	0.52	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	4.65	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Consulting with the environmental authorities

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.27	2.97
Variance	0.52	0.66
Observations	33.00	33.00
Pearson Correlation	0.34	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	8.47	
P(T<=t) one-tail	0.00	

t Critical one-tail	1.69
P(T<=t) two-tail	0.00
t Critical two-tail	2.04

Determining if the P/P is likely to have a significant effect on a Natura 2000 site

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.15	2.91
Variance	0.45	0.77
Observations	33.00	33.00
Pearson Correlation	0.34	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	7.91	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Determining if the P/P is likely to have a significant effect on a Natura 2000 site

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.18	2.61
Variance	0.53	0.68
Observations	33.00	33.00
Pearson Correlation	0.33	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	10.03	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Determining if the P/P is likely to have a significant effect on a Natura 2000 site

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.33	2.76
Variance	0.98	0.69
Observations	33.00	33.00
Pearson Correlation	0.33	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	3.12	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Informing the Public of the results of the screening process and the rational behind the screening decision

t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	4.00	2.88
Variance	1.06	0.73
Observations	33.00	33.00
Pearson Correlation	-0.11	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	4.57	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Determining the key elements of the P/P to be assessed

t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	4.36	2.82
Variance	0.36	0.40
Observations	33.00	33.00
Pearson Correlation	0.01	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	10.21	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Identifying the types of activities that are expected to follow from the implementation of the P/P

t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	4.09	2.85
Variance	0.59	0.70
Observations	33.00	33.00
Pearson Correlation	0.27	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	7.36	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Consulting with the Public to access local knowledge and values concerning the possible effects of the P/P

t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	3.85	2.55
Variance	0.76	0.82
Observations	33.00	33.00
Pearson Correlation	-0.01	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	5.93	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Consulting with the designated environmental authorities

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.24	3.09
Variance	0.44	1.02
Observations	33.00	33.00
Pearson Correlation	0.06	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	5.63	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Identifying the environmental issues to be assessed

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.39	2.61
Variance	0.37	0.62
Observations	33.00	33.00
Pearson Correlation	0.14	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	11.08	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Relating relevant international, national and local plans, objectives and environmental standards (existing & emerging) to the P/P

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.03	2.64
Variance	0.91	1.24
Observations	33.00	33.00
Pearson Correlation	0.36	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	6.84	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Developing draft environmental objectives, indicators, and targets to allow the evaluation of environmental impacts of P/P

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.82	2.58
Variance	0.47	0.69
Observations	33.00	33.00
Pearson Correlation	0.08	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	6.92	

P(T<=t) one-tail	0.00
t Critical one-tail	1.69
P(T<=t) two-tail	0.00
t Critical two-tail	2.04

Identifying reasonable development options and alternative proposals that meet the needs addressed by the P/P and are more sustainable

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.09	2.55
Variance	0.59	0.82
Observations	33.00	33.00
Pearson Correlation	0.02	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	7.56	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Informing stakeholders about the key parts of the P/P, the key environmental issues, and the P/P alternatives

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.91	2.76
Variance	0.77	0.88
Observations	33.00	33.00
Pearson Correlation	0.50	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	7.30	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Obtaining an understanding of the existing state of the environment

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.18	2.33
Variance	0.53	0.35
Observations	33.00	33.00
Pearson Correlation	0.14	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	12.20	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Predicting the environmental changes resulting from the implementation of the P/P or its alternatives

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*

Mean	3.79	2.27
Variance	0.80	0.58
Observations	33.00	33.00
Pearson Correlation	-0.05	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	7.24	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Determining, the nature of the predicted environmental changes

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.12	2.45
Variance	0.61	0.57
Observations	33.00	33.00
Pearson Correlation	0.12	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	9.38	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Establishing the risk of environmental standards being breached by measures in the P/P (and its alternatives)

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.88	2.24
Variance	0.92	0.38
Observations	33.00	33.00
Pearson Correlation	0.48	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	10.94	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Identifying if predicted changes can lead to failure to achieve environmental policies or targets

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.67	2.27
Variance	0.98	0.45
Observations	33.00	33.00
Pearson Correlation	0.33	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	8.02	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Determining if predicted changes will affect environmental resources which are protected by laws/policies

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.27	2.39
Variance	0.58	0.68
Observations	33.00	33.00
Pearson Correlation	0.52	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	13.82	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Determining if the predicted changes will affect environmental resources which, although not legally protected, are important or valuable.

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.82	2.30
Variance	0.40	0.53
Observations	33.00	33.00
Pearson Correlation	0.33	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	10.94	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Identifying how each alternative P/P can be revised/refined to mitigate significant adverse effects & maximise any benefits offered by the P/P

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.15	2.45
Variance	0.82	0.51
Observations	33.00	33.00
Pearson Correlation	0.33	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	10.25	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Developing monitoring/follow-up arrangements for the significant environmental affects of the P/P & its alternatives

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.94	2.39
Variance	0.43	0.50

Observations	33.00	33.00
Pearson Correlation	-0.01	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	9.14	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Establishing the preferred P/P based upon environmental grounds (including the Do-Nothing alternative)

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.88	2.33
Variance	0.61	0.67
Observations	33.00	33.00
Pearson Correlation	0.36	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	9.81	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Providing Stakeholders with the information identified in Annex I of the SEA Directive (The "Environmental Report" or so called "SEA Report")

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.76	2.45
Variance	0.81	0.94
Observations	33.00	33.00
Pearson Correlation	0.52	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	8.15	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Performing an internal (i.e. by SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.88	2.55
Variance	0.92	0.63
Observations	33.00	33.00
Pearson Correlation	0.34	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	7.50	

P(T<=t) one-tail	0.00
t Critical one-tail	1.69
P(T<=t) two-tail	0.00
t Critical two-tail	2.04

Performing an external (independent of the SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.55	2.09
Variance	1.57	0.59
Observations	33.00	33.00
Pearson Correlation	0.34	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	6.81	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Producing a documented statement demonstrating how the "Environmental Report" and any consultations were taken into account in the decision-making process

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	4.03	2.21
Variance	0.84	0.61
Observations	33.00	33.00
Pearson Correlation	0.17	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	9.47	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

Revising the monitoring/follow-up arrangements periodically (so that they take account of new methods/increased understanding of the baseline environment)

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.76	2.39
Variance	0.44	0.62
Observations	33.00	33.00
Pearson Correlation	0.13	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	8.14	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

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Reporting, periodically, to stakeholders on the results of monitoring the significant environmental impacts

t-Test: Paired Two Sample for Means

	Variable 1	*Variable 2*
Mean	3.52	1.97
Variance	0.63	0.47
Observations	33.00	33.00
Pearson Correlation	-0.09	
Hypothesized Mean Difference	0.00	
df	32.00	
t Stat	8.13	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.69	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.04	

SEA TASKS	I mean	P mean
Determining if the P/P is being prepared for one of the 11 sectors specified in the SEA Directive	3.97	3.58
Establishing whether or not the P/P provides a framework for development consent for projects listed in the	3.73	3.09
Establishing if the P/P determines the use of small areas of land at a local scale only AND/OR the P/P is a	3.61	2.85
Consulting with the environmental authorities	4.27	2.97
Determining if the P/P is likely to have a significant effect on a Natura 2000 site	4.15	2.91
Determining if the P/P is likely to result in e-impacts of sch a natre that it shold be taken forward for	4.18	2.61
Consulting at the screening stage with the pblic to determine their views on an e-isses associated with the	3.33	2.76
Informing the pblic of the results of the screening process and the rational behind the decision	4.00	2.88
Determining the key elements of the P/P to be assessed	4.36	2.82
Identifying the types of activities that are expected to follow from the implementation of the P/P	4.09	2.85
Consulting with the Public to access local knowledge and values concerning the possible effects of the P/P	3.85	2.55
Consulting with the designated environmental authorities	4.24	3.09
Identifying the environmental issues to be assessed	4.39	2.81
Relating relevant international, national and local plans, objectivas and environmental standards (existing & emerging) to the P/P	4.03	2.64
Developing draft environmental objectives, indicators, and targets to allow the evaluation of environmental	3.82	2.58
Identifying reasonable development options and alternative proposals that meet the needs addressed by the P/P and are more sustainable	4.09	2.85
Informing stakeholders about the key parts of the P/P, the key environmental issues, and the P/P	3.91	2.76
Obtaining an understanding of the existing state of the environment	4.18	2.33
Predicting the environmental changes resulting from the implementation of the P/P or its alternatives	3.79	2.27
Determining, the nature of the predicted environmental changes	4.12	2.45
Establishing the risk of environmental standards being breached by measures in the P/P (and its	3.88	2.24
Identifying if predicted changes can lead to failure to achieve environmental policies or targets	3.67	2.27
Determining if predicted changes will affect environmental resources which are protected by laws/policies	4.27	2.39
Determining if the predicted changes will affect environmental resources which, although not legally protected, are important or valuable	3.82	2.30
Identifying how each alternative P/P can be revised/refined to mitigate significant adverse effects & maximise environmental benefits of the P/P	4.15	2.45
Developing monitoring/follow-up arrangements for the significant environmental affects of the P/P & its	3.94	2.39
Establishing the preferred P/P based upon environmental grounds (including the Do-Nothing alternative)	3.88	2.33
Providing Stakeholders with the information identified in Annex I of the SEA Directive (The "Environmental Report" or as called "SEA Report")	3.76	2.46
Performing an internal (i.e. by SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	3.88	2.55
Performing an external (independent of the SEA Team) review of the strategic environmental assessment as detailed in the Environmental Report	3.55	2.09
Producing a documented statement demonstrating how the "Environmental Report" and any consultations were	4.03	2.21
Revising the monitoring/follow-up arrangements periodically (so that they take account of new methods/increased understanding of the baseline environment)	3.76	2.39
Reporting, periodically, to stakeholders on the results of monitoring the significant environmental impacts	3.52	1.97
Best training received	2.73	2.73

APPENDIX FOUR

DIRECTIVE 2001/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 27 June 2001
on the assessment of the effects of certain plans and programmes on the environment

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission [1],

Having regard to the opinion of the Economic and Social Committee [2],

Having regard to the opinion of the Committee of the Regions [3],

Acting in accordance with the procedure laid down in Article 251 of the Treaty [4], in the light of the joint text approved by the Conciliation Committee on 21 March 2001,

Whereas:

(1) Article 174 of the Treaty provides that Community policy on the environment is to contribute to, *inter alia*, the preservation, protection and improvement of the quality of the environment, the protection of human health and the prudent and rational utilisation of natural resources and that it is to be based on the precautionary principle. Article 6 of the Treaty provides that environmental protection requirements are to be integrated into the definition of Community policies and activities, in particular with a view to promoting sustainable development.

(2) The Fifth Environment Action Programme: Towards sustainability — A European Community programme of policy and action in relation to the environment and sustainable development [5], supplemented by Council Decision No 2179/98/EC [6] on its review, affirms the importance of assessing the likely environmental effects of plans and programmes.

(3) The Convention on Biological Diversity requires Parties to integrate as far as possible and as appropriate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans and programmes.

(4) Environmental assessment is an important tool for integrating environmental considerations into the preparation and adoption of certain plans and programmes which are likely to have significant effects on the environment in the Member States, because it ensures that such effects of implementing plans and programmes are taken into account during their preparation and before their adoption.

(5) The adoption of environmental assessment procedures at the planning and programming level should benefit undertakings by providing a more consistent framework in which to operate by the inclusion of the relevant environmental information into decision making. The inclusion of a wider set of factors in decision making should contribute to more sustainable and effective solutions.

(6) The different environmental assessment systems operating within Member States should contain a set of common procedural requirements necessary to contribute to a high level of protection of the environment.

(7) The United Nations/Economic Commission for Europe Convention on Environmental Impact Assessment in a Transboundary Context of 25 February 1991, which applies to both Member States and other States, encourages the parties to the Convention to apply its principles to plans and programmes as well; at the second meeting of the Parties to the Convention in Sofia on 26 and 27 February 2001, it was decided to prepare a legally binding protocol on strategic environmental assessment which would supplement the existing provisions on environmental impact assessment in a transboundary context, with a view to its possible adoption on the occasion of the 5th Ministerial Conference 'Environment for Europe' at an extraordinary meeting of the Parties to the Convention, scheduled for May 2003 in Kiev, Ukraine. The systems operating within the Community for environmental assessment of plans and programmes should ensure that there are adequate transboundary consultations where the implementation of a plan or programme being prepared in one Member State is likely to have significant effects on the environment of another Member State. The information on plans and programmes having significant effects on the environment of other States should be forwarded on a reciprocal and equivalent basis within an appropriate legal framework between Member States and these other States.

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(1) OJ C 129, 25.4.1997, p. 14 and OJ C 83, 25.3.1999, p. 13.
(2) OJ C 287, 22.9.1997, p. 101.
(3) OJ C 64, 27.2.1998, p. 63 and OJ C 374, 23.12.1999, p. 9.
(4) Opinion of the European Parliament of 20 October 1998 (OJ C 341, 9.11.1998, p. 18), confirmed on 16 September 1999 (OJ C 54, 25.2.2000, p. 76), Council Common Position of 30 March 2000 (OJ C 137, 16.5.2000, p. 11) and Decision of the European Parliament of 6 September 2000 (OJ C 135, 7.5.2001, p. 155). Decision of the European Parliament of 31 May 2001 and Decision of the Council of 5 June 2001.
(5) OJ C 138, 17.5.1993, p. 5.
(6) OJ L 275, 10.10.1998, p. 1.

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(8) Action is therefore required at Community level to lay down a minimum environmental assessment framework, which would set out the broad principles of the environmental assessment system and leave the details to the Member States, having regard to the principle of subsidiarity. Action by the Community should not go beyond what is necessary to achieve the objectives set out in the Treaty.

(9) This Directive is of a procedural nature, and its requirements should either be integrated into existing procedures in Member States or incorporated in specifically established procedures. With a view to avoiding duplication of the assessment, Member States should take account, where appropriate, of the fact that assessments will be carried out at different levels of a hierarchy of plans and programmes.

(10) All plans and programmes which are prepared for a number of sectors and which set a framework for future development consent of projects listed in Annexes I and II to Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment [1], and all plans and programmes which have been determined to require assessment pursuant to Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna [2], are likely to have significant effects on the environment, and should as a rule be made subject to systematic environmental assessment. When they determine the use of small areas at local level or are minor modifications to the above plans or programmes, they should be assessed only where Member States determine that they are likely to have significant effects on the environment.

(11) Other plans and programmes which set the framework for future development consent of projects may not have significant effects on the environment in all cases and should be assessed only where Member States determine that they are likely to have such effects.

(12) When Member States make such determinations, they should take into account the relevant criteria set out in this Directive.

(13) Some plans or programmes are not subject to this Directive because of their particular characteristics.

(14) Where an assessment is required by this Directive, an environmental report should be prepared containing relevant information as set out in this Directive, identifying, describing and evaluating the likely significant environmental effects of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme; Member States should communicate to the Commission any measures they take concerning the quality of environmental reports.

(15) In order to contribute to more transparent decision making and with the aim of ensuring that the information supplied for the assessment is comprehensive and reliable, it is necessary to provide that authorities with relevant environmental responsibilities and the public are to be consulted during the assessment of plans and programmes, and that appropriate time frames are set, allowing sufficient time for consultations, including the expression of opinion.

(16) Where the implementation of a plan or programme prepared in one Member State is likely to have a significant effect on the environment of other Member States, provision should be made for the Member States concerned to enter into consultations and for the relevant authorities and the public to be informed and enabled to express their opinion.

(17) The environmental report and the opinions expressed by the relevant authorities and the public, as well as the results of any transboundary consultation, should be taken into account during the preparation of the plan or programme and before its adoption or submission to the legislative procedure.

(18) Member States should ensure that, when a plan or programme is adopted, the relevant authorities and the public are informed and relevant information is made available to them.

(19) Where the obligation to carry out assessments of the effects on the environment arises simultaneously from this Directive and other Community legislation, such as Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds [3], Directive 92/43/EEC, or Directive 2000/60/EC of the European Parliament and the Council of 23 October 2000 establishing a framework for Community action in the field of water policy [4], in order to avoid duplication of the assessment, Member States may provide for coordinated or joint procedures fulfilling the requirements of the relevant Community legislation.

(20) A first report on the application and effectiveness of this Directive should be carried out by the Commission five years after its entry into force, and at seven-year intervals thereafter. With a view to further integrating environmental protection requirements, and taking into account the experience acquired, the first report should, if appropriate, be accompanied by proposals for amendment of this Directive, in particular as regards the possibility of extending its scope to other areas/sectors and other types of plans and programmes,

[1] OJ L 175, 5.7.1985, p. 40. Directive as amended by Directive 97/11/EC (OJ L 73, 14.3.1997, p. 5).
[2] OJ L 206, 22.7.1992, p. 7. Directive as last amended by Directive 97/62/EC (OJ L 305, 8.11.1997, p. 42).
[3] OJ L 103, 25.4.1979, p. 1. Directive as last amended by Directive 97/49/EC (OJ L 223, 13.8.1997, p. 9).
[4] OJ L 327, 22.12.2000, p. 1.

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HAVE ADOPTED THIS DIRECTIVE:

Article 1

Objectives

The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.

Article 2

Definitions

For the purposes of this Directive:

(a) 'plans and programmes' shall mean plans and programmes, including those co-financed by the European Community, as well as any modifications to them:

— which are subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and

— which are required by legislative, regulatory or administrative provisions;

(b) 'environmental assessment' shall mean the preparation of an environmental report, the carrying out of consultations, the taking into account of the environmental report and the results of the consultations in decision-making and the provision of information on the decision in accordance with Articles 4 to 9;

(c) 'environmental report' shall mean the part of the plan or programme documentation containing the information required in Article 5 and Annex I;

(d) 'The public' shall mean one or more natural or legal persons and, in accordance with national legislation or practice, their associations, organisations or groups.

Article 3

Scope

1. An environmental assessment, in accordance with Articles 4 to 9, shall be carried out for plans and programmes referred to in paragraphs 2 to 4 which are likely to have significant environmental effects.

2. Subject to paragraph 3, an environmental assessment shall be carried out for all plans and programmes,

(a) which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects listed in Annexes I and II to Directive 85/337/EEC, or

(b) which, in view of the likely effect on sites, have been determined to require an assessment pursuant to Article 6 or 7 of Directive 92/43/EEC.

3. Plans and programmes referred to in paragraph 2 which determine the use of small areas at local level and minor modifications to plans and programmes referred to in paragraph 2 shall require an environmental assessment only where the Member States determine that they are likely to have significant environmental effects.

4. Member States shall determine whether plans and programmes, other than those referred to in paragraph 2, which set the framework for future development consent of projects, are likely to have significant environmental effects.

5. Member States shall determine whether plans or programmes referred to in paragraphs 3 and 4 are likely to have significant environmental effects either through case-by-case examination or by specifying types of plans and programmes or by combining both approaches. For this purpose Member States shall in all cases take into account relevant criteria set out in Annex II, in order to ensure that plans and programmes with likely significant effects on the environment are covered by this Directive.

6. In the case-by-case examination and in specifying types of plans and programmes in accordance with paragraph 5, the authorities referred to in Article 6(3) shall be consulted.

7. Member States shall ensure that their conclusions pursuant to paragraph 5, including the reasons for not requiring an environmental assessment pursuant to Articles 4 to 9, are made available to the public.

8. The following plans and programmes are not subject to this Directive:

— plans and programmes the sole purpose of which is to serve national defence or civil emergency,

— financial or budget plans and programmes.

9. This Directive does not apply to plans and programmes co-financed under the current respective programming periods [1] for Council Regulations (EC) No 1260/1999 [2] and (EC) No 1257/1999 [3].

[1] The 2000-2006 programming period for Council Regulation (EC) No 1260/1999 and the 2000-2006 and 2000-2007 programming periods for Council Regulation (EC) No 1257/1999.

[2] Council Regulation (EC) No 1260/1999 of 21 June 1999 layi down general provisions on the Structural Funds (OJ L 16 26.6.1999, p. 1).

[3] Council Regulation (EC) No 1257/1999 of 17 May 1999 c support for rural development from the European Agricultu Guidance and Guarantee Fund (EAGGF) and amending and repeali certain regulations (OJ L 160, 26.6.1999, p. 80).

Article 4

General obligations

1. The environmental assessment referred to in Article 3 shall be carried out during the preparation of a plan or programme and before its adoption or submission to the legislative procedure.

2. The requirements of this Directive shall either be integrated into existing procedures in Member States for the adoption of plans and programmes or incorporated in procedures established to comply with this Directive.

3. Where plans and programmes form part of a hierarchy, Member States shall, with a view to avoiding duplication of the assessment, take into account the fact that the assessment will be carried out, in accordance with this Directive, at different levels of the hierarchy. For the purpose of, *inter alia*, avoiding duplication of assessment, Member States shall apply Article 5(2) and (3).

Article 5

Environmental report

1. Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated. The information to be given for this purpose is referred to in Annex I.

2. The environmental report prepared pursuant to paragraph 1 shall include the information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment.

3. Relevant information available on environmental effects of the plans and programmes and obtained at other levels of decision-making or through other Community legislation may be used for providing the information referred to in Annex I.

4. The authorities referred to in Article 6(3) shall be consulted when deciding on the scope and level of detail of the information which must be included in the environmental report.

Article 6

Consultations

1. The draft plan or programme and the environmental report prepared in accordance with Article 5 shall be made available to the authorities referred to in paragraph 3 of this Article and the public.

2. The authorities referred to in paragraph 3 and the public referred to in paragraph 4 shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme or its submission to the legislative procedure.

3. Member States shall designate the authorities to be consulted which, by reason of their specific environmental responsibilities, are likely to be concerned by the environmental effects of implementing plans and programmes.

4. Member States shall identify the public for the purposes of paragraph 2, including the public affected or likely to be affected by, or having an interest in, the decision-making subject to this Directive, including relevant non-governmental organisations, such as those promoting environmental protection and other organisations concerned.

5. The detailed arrangements for the information and consultation of the authorities and the public shall be determined by the Member States.

Article 7

Transboundary consultations

1. Where a Member State considers that the implementation of a plan or programme being prepared in relation to its territory is likely to have significant effects on the environment in another Member State, or where a Member State likely to be significantly affected so requests, the Member State in whose territory the plan or programme is being prepared shall, before its adoption or submission to the legislative procedure, forward a copy of the draft plan or programme and the relevant environmental report to the other Member State.

2. Where a Member State is sent a copy of a draft plan or programme and an environmental report under paragraph 1, it shall indicate to the other Member State whether it wishes to enter into consultations before the adoption of the plan or programme or its submission to the legislative procedure and, if it so indicates, the Member States concerned shall enter into consultations concerning the likely transboundary environmental effects of implementing the plan or programme and the measures envisaged to reduce or eliminate such effects.

Where such consultations take place, the Member States concerned shall agree on detailed arrangements to ensure that the authorities referred to in Article 6(3) and the public referred to in Article 6(4) in the Member State likely to be significantly affected are informed and given an opportunity to forward their opinion within a reasonable time-frame.

3. Where Member States are required under this Article t enter into consultations, they shall agree, at the beginning c such consultations, on a reasonable timeframe for the duratio of the consultations.

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Article 8

Decision making

The environmental report prepared pursuant to Article 5, the opinions expressed pursuant to Article 6 and the results of any transboundary consultations entered into pursuant to Article 7 shall be taken into account during the preparation of the plan or programme and before its adoption or submission to the legislative procedure.

Article 9

Information on the decision

1. Member States shall ensure that, when a plan or programme is adopted, the authorities referred to in Article 6(3), the public and any Member State consulted under Article 7 are informed and the following items are made available to those so informed:

(a) the plan or programme as adopted;

(b) a statement summarising how environmental considerations have been integrated into the plan or programme and how the environmental report prepared pursuant to Article 5, the opinions expressed pursuant to Article 6 and the results of consultations entered into pursuant to Article 7 have been taken into account in accordance with Article 8 and the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with, and

(c) the measures decided concerning monitoring in accordance with Article 10.

2. The detailed arrangements concerning the information referred to in paragraph 1 shall be determined by the Member States.

Article 10

Monitoring

1. Member States shall monitor the significant environmental effects of the implementation of plans and programmes in order, *inter alia*, to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action.

2. In order to comply with paragraph 1, existing monitoring arrangements may be used if appropriate, with a view to avoiding duplication of monitoring.

Article 11

Relationship with other Community legislation

1. An environmental assessment carried out under this Directive shall be without prejudice to any requirements under Directive 85/337/EEC and to any other Community law requirements.

2. For plans and programmes for which the obligation to carry out assessments of the effects on the environment arises simultaneously from this Directive and other Community legislation, Member States may provide for coordinated or joint procedures fulfilling the requirements of the relevant Community legislation in order, *inter alia*, to avoid duplication of assessment.

3. For plans and programmes co-financed by the European Community, the environmental assessment in accordance with this Directive shall be carried out in conformity with the specific provisions in relevant Community legislation.

Article 12

Information, reporting and review

1. Member States and the Commission shall exchange information on the experience gained in applying this Directive.

2. Member States shall ensure that environmental reports are of a sufficient quality to meet the requirements of this Directive and shall communicate to the Commission any measures they take concerning the quality of these reports.

3. Before 21 July 2006 the Commission shall send a first report on the application and effectiveness of this Directive to the European Parliament and to the Council.

With a view further to integrating environmental protection requirements, in accordance with Article 6 of the Treaty, and taking into account the experience acquired in the application of this Directive in the Member States, such a report will be accompanied by proposals for amendment of this Directive, if appropriate. In particular, the Commission will consider the possibility of extending the scope of this Directive to other areas/sectors and other types of plans and programmes.

A new evaluation report shall follow at seven-year intervals.

4. The Commission shall report on the relationship between this Directive and Regulations (EC) No 1260/1999 and (EC) No 1257/1999 well ahead of the expiry of the programming periods provided for in those Regulations, with a view to ensuring a coherent approach with regard to this Directive and subsequent Community Regulations.

Article 13

Implementation of the Directive

1. Member States shall bring into force the laws, regulation and administrative provisions necessary to comply with th Directive before 21 July 2004. They shall forthwith inform th Commission thereof.

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2. When Member States adopt the measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

3. The obligation referred to in Article 4(1) shall apply to the plans and programmes of which the first formal preparatory act is subsequent to the date referred to in paragraph 1. Plans and programmes of which the first formal preparatory act is before that date and which are adopted or submitted to the legislative procedure more than 24 months thereafter, shall be made subject to the obligation referred to in Article 4(1) unless Member States decide on a case by case basis that this is not feasible and inform the public of their decision.

4. Before 21 July 2004, Member States shall communicate to the Commission, in addition to the measures referred to in paragraph 1, separate information on the types of plans and programmes which, in accordance with Article 3, would be subject to an environmental assessment pursuant to this Directive. The Commission shall make this information available to the Member States. The information will be updated on a regular basis.

Article 14

Entry into force

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Communities*.

Article 15

Addressees

This Directive is addressed to the Member States.

Done at Luxembourg, 27 June 2001.

For the European Parliament	*For the Council*
The President	*The President*
N. FONTAINE	B. ROSENGREN

ANNEX I

Information referred to in Article 5(1)

The information to be provided under Article 5(1), subject to Article 5(2) and (3), is the following:

(a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;

(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;

(c) the environmental characteristics of areas likely to be significantly affected;

(d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;

(e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;

(f) the likely significant effects [1] on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;

(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;

(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;

(i) a description of the measures envisaged concerning monitoring in accordance with Article 10;

(j) a non-technical summary of the information provided under the above headings.

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[1] These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

IT Sligo An Institiúid Teicneolaíochta, Shligigh

ANNEX II

Criteria for determining the likely significance of effects referred to in Article 3(5)

1. The characteristics of plans and programmes, having regard, in particular, to
   - the degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources,
   - the degree to which the plan or programme influences other plans and programmes including those in a hierarchy,
   - the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development,
   - environmental problems relevant to the plan or programme,
   - the relevance of the plan or programme for the implementation of Community legislation on the environment (e.g. plans and programmes linked to waste-management or water protection).
2. Characteristics of the effects and of the area likely to be affected, having regard, in particular, to
   - the probability, duration, frequency and reversibility of the effects,
   - the cumulative nature of the effects,
   - the transboundary nature of the effects,
   - the risks to human health or the environment (e.g. due to accidents),
   - the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected),
   - the value and vulnerability of the area likely to be affected due to:
     - special natural characteristics or cultural heritage,
     - exceeded environmental quality standards or limit values,
     - intensive land-use,
   - the effects on areas or landscapes which have a recognised national, Community or international protection status.