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**MATCHING NATURE:
INTEGRATED COASTAL ZONE MANAGEMENT
IN THE HAURAKI GULF**

A Thesis Presented in Part Fulfillment of the Requirements for the Degree
of

MASTER OF PHILOSOPHY IN RESOURCE AND ENVIRONMENTAL
PLANNING

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ABSTRACT

This thesis aims to assess characteristics for a framework of ICZM as a basis for an analysis of coastal management in New Zealand using the Hauraki Gulf as a case study. This would determine whether efficient, equitable and effective policy and environmental outcomes are occurring amongst different organisations and stakeholders.

Research design followed an action research methodology. A literature review relating to various aspects of ICZM has been compiled and summarised into criteria for application to coastal management in the Hauraki Gulf. Interviews were carried out with key stakeholders associated with policy and implementation in the Gulf. The interviews are analysed by evaluating change based on the theoretical criteria in three areas: target groups, innovative organisations, and the interactive setting. This has allowed a framework to be developed and subsequently sent to interview participants for review.

The conclusions for the thesis concern issues associated with achieving ICZM for the Hauraki Gulf and the applicability of an ICZM based framework. Issues relate to lack of clarity, interpretation of roles, relationship building, education and promoting a *culture change*, cynicism about integrated management based on statutory interpretation of roles, bureaucratic interactions between central, regional and local government agencies as disincentives for effective ICZM. A process framework and recommendations have been developed to enhance stakeholder input into coastal management and the first iteration has highlighted a need for further simplification.

CHAPTER ONE: INTRODUCTION

THE PROBLEM

The discussion in this chapter will focus on outlining the framework for the research including a statement of the problem, justification and a description of chapter contents.

Can the existing management structure for the coastal environment provide for equitable, efficient, and effective policy co-ordination and outcomes between organisations and stakeholders concerned with coastal management to meet legislated goals?

Integration is not defined a concept that maybe simply defined in legislation. The concept has been applied at various scales and within various contexts. Initiatives for integrating management in the coastal environment in New Zealand have been modelled at the localised community scale (e.g Whiritoa Beach Care, Corromandel) and across larger administrative contexts and ecosystems (e.g. Pauatahanui inlet, Plimmerton). There are several overseas examples of functioning large-scale systems of integrated coastal zone management (Sorensen & McCreary; 1990, Hennessey; 1994, Raymond; 1996). The Resource Management Act provides a theoretical framework for integration. However, there are difficulties in implementing a large-scale ICZM system for New Zealand coastal regions like the Hauraki Gulf. The Hauraki Gulf is a coastal environment is under pressure from use and impacts that are internal and external to its coastal environment. User groups, tangata whenua, and commercial organisations believe that the existing management system lacks co-ordination to meet sustainable management objectives. This thesis aims to contribute in bridging the gap between theory and practice to improve the practice of implementing integrated management in the coastal environment of New Zealand using the Hauraki Gulf as a case study to illustrate possibilities for improvement.

THESIS AIM

This thesis aims to assess characteristics for a framework of integrated coastal zone management as a basis for analysis of coastal management in New Zealand using the Hauraki Gulf as a case study. This would determine whether efficient, equitable and

effective policy and environmental outcomes are occurring amongst different organisations and stakeholders.

OBJECTIVES & RESEARCH QUESTIONS

1 Understand critical attributes for Integrated Coastal Zone Management (ICZM)

Objective one is used to provide a synthesis of the critical attributes for the successful implementation and practice of integrated coastal management. This will be achieved by reviewing New Zealand and overseas material discussing ICZM concepts and associated case studies at various scales of management. Fundamental to this objective is the discussion of linkages between different paradigms including adaptive management, ecosystem management, systems theory and integrated environmental management (refer Chapter Two). This relates to a question asking “what methods or processes help or hinder the integration of coastal management organisations to meet sustainable development goals?”

2 Assess Integrated Coastal Management in the Hauraki Gulf.

The second objective involves discussions with key stakeholders about their issues and concerns for coastal management of the gulf. To achieve this objective, an Action Research methodology has been applied (Chapter Three). The methodology will attempt to evaluate the degree of integration between organisations concerned with coastal management in the Hauraki Gulf. This will be achieved through assessment of whether existing legislation and existing relationships between organisations are helping or hindering co-ordination between organisations concerned with the Hauraki Gulf.

3 Develop framework to improve ICZM in New Zealand

Objective 3 involves combining the theory and interview elements of the research by analysis of Target Groups, Innovating Organisations, and Interactive Settings. Criteria are established from the literature review (Objective One). A framework to improve ICZM in New Zealand will be developed for use by resource management practitioners and stakeholders. This objective is based on information about methods and processes and also involved questioning whether existing relationships between organisations are helping or hindering co-ordination between organisations and how improvements may be made.

RESEARCH DESIGN

The methodology is outlined in Chapter Three and includes a literature review, semi-structured interviews, comparative analysis, and practitioner review of framework

ICZM is a comprehensive theory and is influenced by different factors in the iteration of its process cycle. This thesis offers a theoretical framework as one possibility for its application with reference to the Hauraki Gulf and with wider recommendations for coastal management in New Zealand.

Characteristics of ICZM within a framework maybe applicable at different stages of the process and at different spatial and temporal scales depending on who or why it is required to be applied. It is also considered that although the framework and recommendations are the final product of this research, there is more investigation required in the application of ICZM. Further research suggestions are made in Chapter Seven. This is reinforced by the cyclic and iterative nature of the action research methodology.

The scope of this research limited consultation to a proportion of the full range of available stakeholder interests as participants in the research. Time was a significant limitation for this and only two iterations of the research cycle have been possible.

CHAPTER CONTENT

The main body of this thesis is contained in the following chapters. Chapter Two describes the characteristics of ICZM. This will be by discussing its evolution, definition, issues, process, process components, implementation and evaluation.

Chapter Three details the research design and methodology based on an action research approach and linked to analysis of statutory documentation. The purpose is to highlight the necessity of using action research as a tool for linking ICZM attributes into the existing institutional structure for coastal management.

Chapter Four provides for the application of ICZM into the New Zealand context by assessing the legislative and administrative structures for coastal management using the Hauraki Gulf as a case study.

Chapter Five discusses the results of the fieldwork of first round semi-structured interviews. It divides the collated material as per the topic headings and groups the respondents under common themes or separately when there is divergences in viewpoints.

Chapter Six analyses the collated interview material by contrasting it with the recommendations of the theoretical review. It also presents action points for change in organisations involved in managing the Hauraki Gulf. A preliminary framework is provided for participant review with a second and final framework at the chapters conclusion.

Chapter Seven summarises the analysis and reintroduces the original questions to evaluate whether these have been answered. It also presents ideas for further research and reflects on the usefulness of the framework and research.

CHAPTER TWO: THE THEORY OF ICZM

INTRODUCTION

The following literature review discusses the theory of Integrated Coastal Zone Management (ICZM) and the connections between similar concepts such as integrated coastal management, integrated environmental management, ecosystem management and adaptive management. This review also explains the significance of general systems theory and social science as approaches that reinforce the theory and practice of ICZM. A typology diagram (Figure 2) illustrates the relationships between different theory's and shows the interconnection of these concepts.

The review starts with an outline of the evolution and definition of ICZM. Issues drawn from the literature are discussed. The process used for ICZM is discussed emphasising components relating to governance, stakeholders and information. The implementation and evaluation of ICM/ ICZM is outlined. There is a brief discussion of integrative approaches relating to ICZM. Finally a conclusion summarises criteria used to form the basis for the interviews and latter analysis [Chapter Four and Six].

This review establishes the main ideas influencing the practice and application of ICZM especially in the specific areas of policy co-ordination and implementation. The literature expansively covers coastal management issues in developing and developed regions, tropical and temperate countries and small to large-scale scenarios.

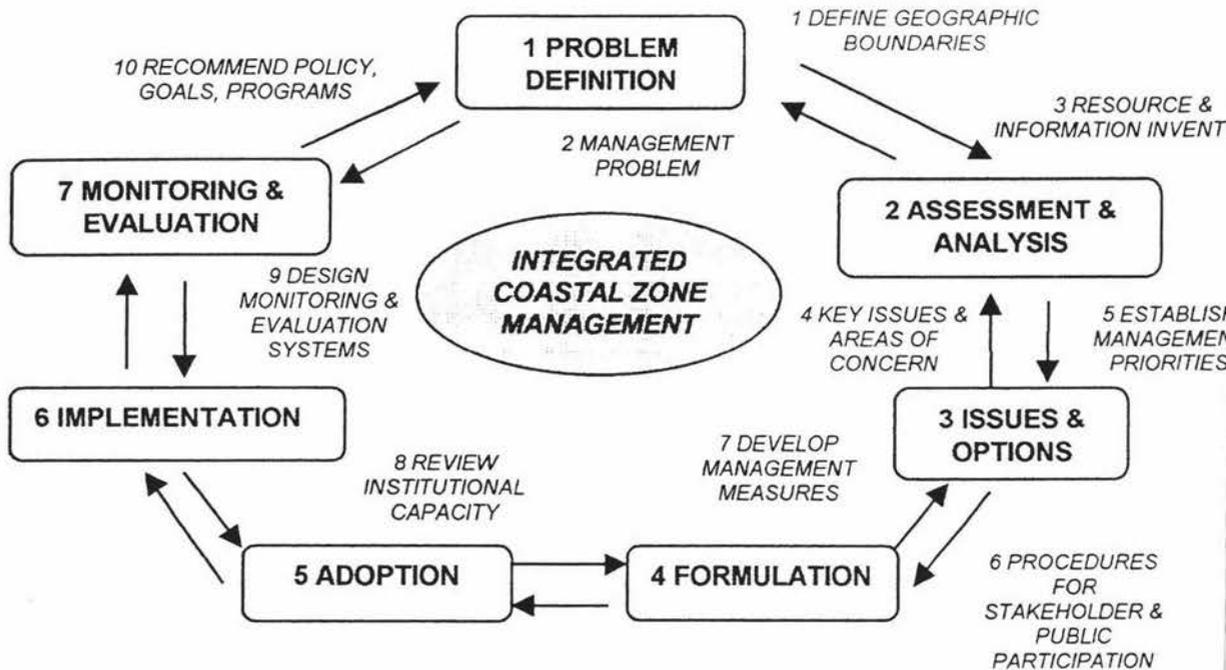
For the purpose of this research, ICZM is defined as a strategic approach to achieve the aim of sustainable development by the holistic management of coastal environments and resources. Integration is achieved through the comprehensive inclusion of multidisciplinary perspectives and values. The strategy requires co-ordination by a central authority to implement integrated planning and management objectives whilst controlled and directed by the organisations concerned with program implementation, relative to the scale of local, community, regional, and national goals.

SUMMARY OF PROCESS

The basic ICZM process is usually composed of approximately seven stages (light gray boxes Figure 1), linked by iterative feedback loops. Each stage is necessary for ICZM to

offset the complexity and uncertainty of interactions between the natural and socio economic elements of the coastal environment. It is an analytical process that advises on priorities, trade offs, problems and solutions. The process is co-ordinated but not synchronised (Figure 2). Different action are appropriate for each stage (1-10) of the process.

FIGURE 1: ICZM PROCESS DIAGRAM



Source: Pernetta & Elder (1993); Lawrence (1996).

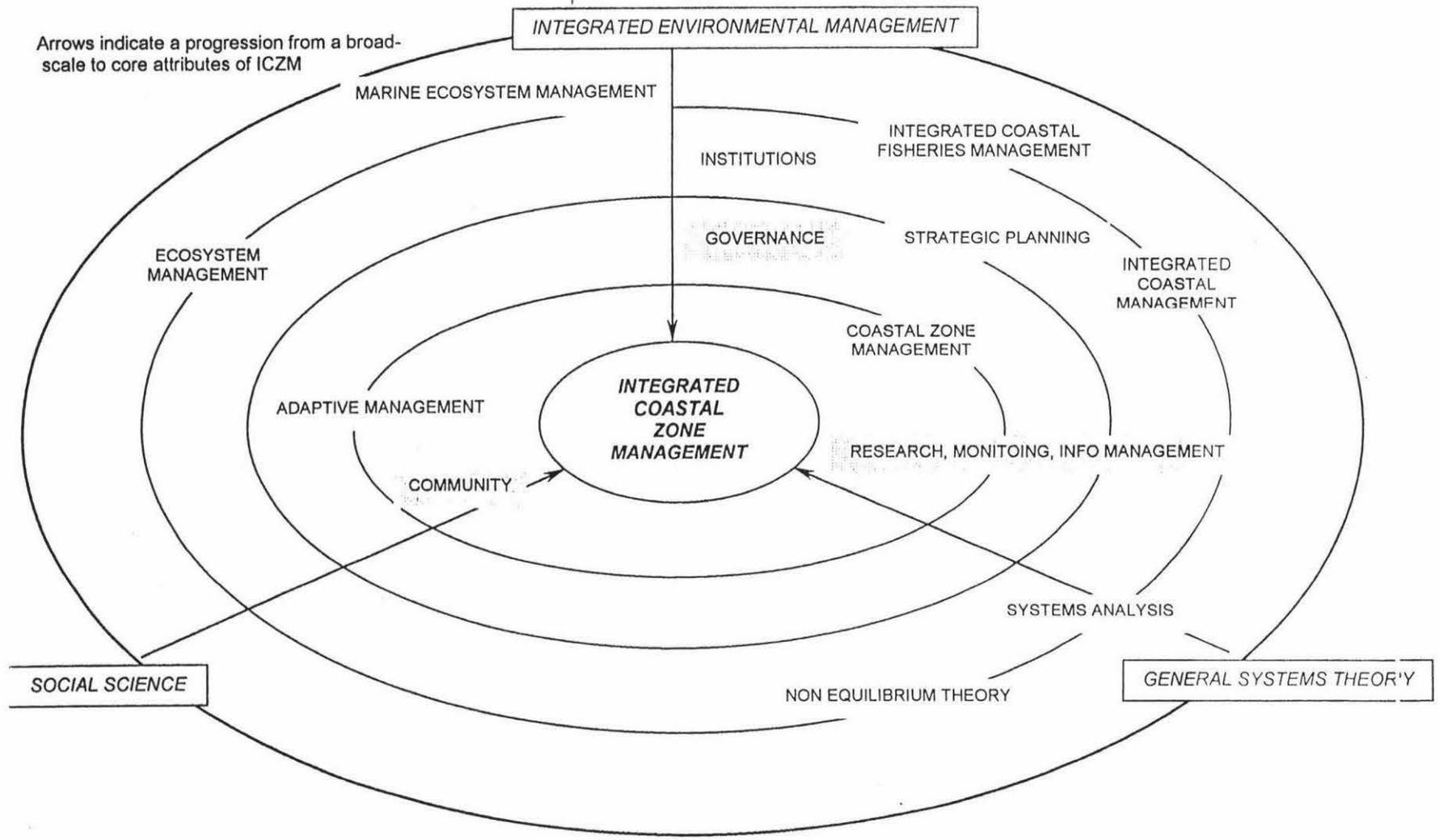
EVOLUTION OF ICZM

ICZM theory has evolved in tandem with other broad environmental approaches over a 30 year period (Sorensen, 1997), but has only recently become differentiated as a separate approach in resource management.

During the 1970's and 80's, ICZM was considered to operate at a single or multi-sectoral level. All industry or socio-economic sectors using the coastal environment and their impacts were considered in isolation to other activities within the same area. Management focused on the margin of the coastal strip with little regard for adjacent areas (Kenchington & Crawford, 1993). ICZM is usually implemented and developed as part of a political process (Vallega, 1993) with a push towards a more fully integrated

approach as nations take up the sustainable development guidelines developed by the United Nations in the UNCED Agenda 21 and UNCLOS conventions (UNCED, 1992).

FIGURE 2: TYPOLOGY OF THEORETICAL CONCEPTS



A background of sustainable development and general systems theory has changed ICZM to a more holistic style (Vallega, 1994). The 'imperative of integration' (Cincin-Sain, 1993) has shifted coastal management research into principles for integrating sustainable resource use practices across sectors, jurisdictions and nations. Unifying elements of integration and co-ordination in environmental management also extend into key areas such as planning, institutional arrangements, legislation, finance, law enforcement, monitoring and evaluation with their incorporation into plan formulation and implementation (Thia Eng, 1997).

The sustainable development of coastal areas is established as an international objective in Agenda 21. Paragraph 17.6 states that:

“Each coastal state should consider establishing, or strengthening appropriate co-ordinating mechanisms for integrated management and the sustainable development of coastal and marine areas and their resources, at both the local and national levels.”

Acceptance of UNCED puts sustainable development into the top rank of coastal management goals (Vallega, 1994). Sustainable development has transformed from an evolutionary paradigm recognised neither as a theory of wishful thinking lacking speculative neutrality or as a non-deterministic ideology (Vallega, 1994). The basic components of sustainable development in this context are integrity of the ecosystem (the highest goal for the coastal area), social equity (2nd highest goal), and economic efficiency (3rd highest goal). These components include social objectives within approaches for integrated environmental management. Integrated Environmental Management (Born & Sonzogni, 1995) and Integrated Resource Management (Mackenzie, 1997) are approaches identifying management as *comprehensive, inter-connective, strategic* and *co-ordinating* (Born & Sonzogni, 1995)

Integrated coastal management theory has also been enhanced by the contribution of systems theory as it aggregates the variables of space, time and issues to form a comprehensive strategy. It is concerned with the interactions and resulting changes to the set of elements or properties making up a system that is either explicitly determined (regulated) or not explicitly perceived or determined. “A system is an abstraction of the real world... It is a schematisation of reality by means of a set of elements and their

interactions...” (van der Weide, 1993:131). Systems analysis is an appropriate tool to structure a multi disciplinary approach (van der Weide, 1993) that brings together the natural resource system and socio-economic user system under ICZM. Effective management is achieved by linking different sectors and jurisdictions to act as a single system within their common environment (Vallega, 1993).

Ecosystem management is also related to ICZM as a branch of the integrated environmental management concept (Born & Sonzogni, 1995). It is differentiated from ICZM theory by ideas that stem from the social sciences to describe a concept that is “more like a paradigm than an empirical reality” (Hennessey, 1994). The ecosystem management concept involves parameters that confuse the issue of dealing with uncertainty (Roe, 1996). The goal of an ecosystem management approach is to restore, enhance and protect ecosystem integrity (Mackenzie, 1997) that encompasses the specific requirements of ICZM as a management tool ‘nested’ within a broader framework (Hennessey pers com, 1998). Ecosystem management reinforces learning as an incremental and iterative process of experimentation, re-experimentation, continual hypothesis testing, feedback and gradual trial and error (Roe, 1996).

Integrated coastal fisheries management is another related concept. Strategic elements shared by other integrated environmental management approaches are used to strengthen the past practices of biological management (Willmann & Insull, 1993).

These strategic elements include:

- Awareness creation,
- Local participation,
- Removing open access,
- Setting the correct resource price,
- Encouraging research on appropriate training and technology, and
- Improving co-ordination and planning to integrate other sectors and minimise externalities (Willmann & Insull, 1993)

Integrated coastal zone management has been designed and implemented for many coastal and marine ecosystems around the world including the Great Lakes region (Lawrence, 1997) and Chesapeake Bay (Hennessey, 1994) in North America and the Great Barrier Reef (Raymond, 1996) on the east coast of Australia. These are large-scale inshore or marine coastal systems that accommodate many layers of administrative boundaries and contain areas of intensive human use. The development of a strategic vision for the Great Barrier Reef in establishing a long term ICZM perspective has been described by the IUCN as a world model for regional development and regional participative planning (Raymond, 1996).

These examples are not closely analogous to coastal management in the Hauraki Gulf but are useful for comparative analysis in the case study presenting elements critical for success.

Integrated coastal management is a complex and daunting process and practitioners and theorists should “avoid overselling integrated coastal management as some type of Holy Grail” (Cicin-Sain, 1993:35).

DEFINITION OF ICZM

ICZM has emerged from the term ‘integrated management’ in the development of resource management principles by various agencies of the United Nations since 1972. It shares in common goals with theory relating to *integrated resource management*, which are to:

“Share and co-ordinate the values and interests of a broad range of interests when conceiving, designing and implementing policies, programs or projects.” (Kenchington & Crawford, 1993).

Integrated resource management can be achieved at various dimensions including; horizontal and vertical, land and sea use processes, analysis and assessment across disciplines, programs of planning, management education and applied research (Sorensen, 1997).

In this thesis integrated coastal zone management is defined as-

“The integrated planning and management of coastal resources and environments in a manner that is based on the physical, socioeconomic, and political interconnections both within and among the dynamic coastal systems, which when aggregated together, define a coastal zone” (Sorensen, 1997:9).

An additional consideration is that the coastal zone should be managed as a whole in relation to local, national and international goals (Kenchington & Crawford, 1993). Horizontal and vertical integration also has positive and negative influences pivotal to successful ICZM (Sorensen, 1997). This concurs with definitions of key concepts for integrated coastal management that relate to coastal use¹, coastal resources² and the coastal zone³ (Vallega, 1994) and outline the arena for natural and human interactions.

The definition of coastal use is intended to include human built structures and facilities and is a relational concept as a function of the resource and a human tool. It is ambiguous in that the use is developed to meet a given social or individual goal (Vallega, 1994). The coastal area has a broader distinction and is a function of the environment, coastal uses, and coastal resources (Vallega, 1994; Clark, 1996).

Cross Sectoral Integrated Coastal Area Planning is a concept similar to ICZM describing:

“Continuous, iterative process with continuous feedback loops, not only allowing for future changes but for continual redefinition and reassessment of competing interests in the sustainable development of the coastal area.” (Pernetta & Elder, 1993).

This is a format that favours adaptive management techniques over strategic approaches as suggested by a number of authors (Vallega, 1993; Cicin-Sain, 1993; Kenchington and Crawford, 1993).

¹ Coastal use refers to the utilisation of coastal resources for economic, aesthetic, recreational, scientific or educational purposes (after Sorensen & McCreary, 1990).

² A coastal resource is defined as a natural, often renewable commodity, the existence of which depends on the coast or on the value attributed to the circumstance that it is located within the coastal zone (Vallega, 1994).

³ “...that part of the land affected by its proximity to the sea and that part of the ocean affected by its proximity to the land....an area in which processes depending on the interaction between land and sea are most intense” (Vallega, 1994, after Sorensen & McCreary, 1990).

The purpose of ICZM is to maximise benefits provided by the coastal zone and minimise conflicts and harmful effects of activities on each other, on resources and on the environment meaning that it is a tool and does not directly manage resources (Post & Lundin, 1996). Chua (1997) supports this stating:

“Protect the functional integrity of ecosystems and maintain a sustainable flow of goods and services generated by them. Human activities affecting the well being of the coastal environment must be regulated and adequately managed.”

Objectives of ICZM are also influenced by an anthropocentric (refer glossary of terms) need to provide a healthy life support system, and effective, fair, transparent and participatory system for social democracy, (Olsen, 1993). Operational objectives of ICzM usually relate to strengthening sectoral management, protecting productivity and biological diversity of coastal ecosystems, and promoting rational development and sustainable utilisation of coastal resources (Post & Lundin, 1996).

ISSUES

Issues for coastal management with generic coastal issues concentrating on degradation of coastal resources, it's causes, and the impact on users. Issues may relate to problems in interactions between users or different sectors locating on the coast affecting coastal resources, coastal flora and fauna, natural hazards, coastal environment and processes. Coastal policy, analytical techniques, professional practices and the use of information systems or online data services may also be disrupted (Sorensen, 1997; Clark, 1996; Vallega, 1993).

Issue analysis is needed to comprehend the conflicts, economic tradeoffs, benefits and working mechanisms before a government can allow development with specific implementation (Clark, 1996). Issue analysis is the principle tool for strategic planning and is organised so as to answer the questions of decision-makers concerning the conflicts facing coastal development and coastal resources. Issue analysis attempts to categorise, weight, balance, evaluate, and prioritise against the political, social, and economic background. This is viewed as a “triage” exercise where effort is directed to more readily solvable problems rather than intractable ones (Clark, 1996).

Ecosystem management as a core element for ICZM addresses issues of complexity in the environmental, economic and social systems. It assumes there is inadequate knowledge about complex ecosystems within existing management contexts (Roe, 1996). This requires an interdisciplinary approach with participation by individuals with a range of expertise, perspectives and values (Mackenzie, 1996). Equal status should be given to disciplines and stakeholder values and a multidisciplinary approach is best achieved at locally case specific levels (Roe, 1996; Raymond, 1996).

Planning and regulatory agencies that concentrate on single issues such as natural hazards usually do not create a system that accounts for broader environmental concerns such as water quality, habitat loss and ecosystem health. Professionals should recognise the inter-connective linkages between and within the natural and social subsets in an ecosystem (Born & Sonzogni, 1995) that create common issues for ICZM efforts (Sorensen, 1997). Table 1 summarises issues discussed and referenced to previous sections.

TABLE 1: COMMON ISSUES FOR ICZM

INTEGRATED MANAGEMENT APPROACH	ISSUES
Integrated Environmental Management (1)	Co-ordination of interaction linkages extending beyond public sector (2)
Integrated Coastal Management(3)	<p>Insufficient planning</p> <p>Lack of central and local government funds to manage coastal zone</p> <p>Lack of clearly stated goals</p> <p>Limited public participation in decision-making</p> <p>Inadequate mechanisms for dispute resolution</p> <p>Programs are reactive and issue driven rather than anticipatory</p> <p>Fragmentation of government responsibility</p> <p>Competing coastal resource demands</p> <p>Complex, costly, time consuming approval procedures</p> <p>No focus on the cumulative impact of decisions</p> <p>Lack of national planning and policy co-ordination</p> <p>Lack of enforcement or monitoring</p>
Integrated Coastal Zone Management(4)	<p>Land based development of coastal areas</p> <p>Fisheries development and exploitation</p> <p>Conflicts of use, over use and compatibility</p> <p>Establishing inland and ocean boundaries (5).</p>
Marine Ecosystem Management(6)	<p>Making correct resource assessment</p> <p>Predicting the natural behaviour of the fishery resources and their interactions</p> <p>Correctly predicting effects of management measures</p> <p>Determining fishing effects and biological reference points</p> <p>Control of fishing</p>
Ecosystem Management (7)	<p>Moving from a fragmented institutional structure and incremental policy process to a comprehensive and integrated one</p> <p>Incentives to promote intergovernmental co-operation and interdisciplinary co-ordination</p> <p>Decision-making processes for multiple parties with different statutory goals</p> <p>Roles for non-governmental organisations, the public and the private sector</p> <p>Resource management along ecologically determined boundaries</p>
Coastal Management(8)	Dialogue between scientists and managers for management orientated research
Futures Thinking(9)	<p>Framework for participants to work in same direction</p> <p>Stakeholder commitment and equality</p>
Double Loop Learning (10)	<p>Implementing changing policy instruments</p> <p>Recognising changing goals</p>

Table 1 Sources: (1) Born & Sonzogni 1995, (2) Brinkerhoff, 1996, Kenchington & Crawford (1993), (4) Pernetta & Elder (1993), (5) Sorensen, 1997, (6) Laevatsu (1996), (7) Mackenzie (1996), (8) Thia Eng (1997), (9) Raymond (1996), (10) Hennessey (1994).

PROCESS

A process is a series of actions, a sequence of operations or changes undergone (Microsoft Bookshelf Basics; 1996). The ICZM process is an iterative cycle (Refer to Figure 1) following a pattern of planning, implementation, monitoring and evaluation in considering key actions such as defining boundaries, compiling information, involving stakeholders, and assessing institutional capacity (Lawrence, 1996). This section discusses the influence of process on the components, implementation and evaluation of ICZM.

Processes for ICZM aim to provide a mandate for achieving goals such as sustainable management. Objective setting, planning and implementation is aimed towards conflict resolution by involving a spectrum of interest groups to accommodate interests and achieve balanced resource use (Post & Lundin, 1996). Policies and goals developed for specific problems require a process of ‘triple loop thinking’ that integrates (1) knowledge about the involved organisations, (2) their interactions, and (3) the investigation of regionally significant issues (Raymond, 1996).

ICZM is usually based on a legal and institutional framework. It is also a process that integrates development and management plans for coastal areas with environmental and social goals made with the participation of affected stakeholders (Lawrence, 1997). It is essential when preparing an ICZM strategy to validate and integrate with other operational plans and strategies within its region (Raymond, 1996).

Process is not altered by differences in scale and scope between ICM and ICZM. Distinguishing between *coastal zone* and *coastal area* clarifies management in that a coastal area maybe the coastal waters, coastline, coastlands or a combination, while ICZM is broader, with management programs applying to all the above listed areas (Sorensen, 1997).

Integrated coastal management⁴ requires a process of developing a shared vision to

“Provide the framework that guides all decision-making, planning and action... everything from the structure of the organisation to leadership style,

⁴ A futures project for the Great Barrier Reef in Australia (Raymond, 1996). See **INTEGRATION**.

management methods, and action plans... for a vision to have such impact, it must be well understood and shared by all of the organisations key people” (Lewis, 1997:11).

Policy formulation, goal setting and decision-making processes should be transparent, open and accessible to affected stakeholders. Explanation of concepts relating to processes (e.g. the precautionary rule, polluter pays, resource accounting, transboundary responsibility, intergenerational equity) should be incorporated into management (Post & Lundin, 1996). Setting the planning process within the local ecosystem allows evolutionary management with development according to user and system needs and a legitimization of different ecosystem concepts (Roe, 1996; Barrett *et al*, 1997). Participation may be based on actual involvement or by representation and feedback (Raymond, 1996).

ICZM practices require that programs account for the uncertainty and complexity of the relations between system elements. Processes are the continuously changing interactions to the set of elements or properties relevant to the problem to be addressed (Thia Eng, 1997; Van der Weide, 1993). The dynamic relations of processes create complex adaptive behaviour linking the attributes of coastal management systems to the living system of non-equilibrium theory (Geldof, 1995, Sorensen, 1997). This is shown in the table below.

TABLE 2: COMPARISON OF NON-EQUILIBRIUM AND COASTAL SYSTEMS

NON-EQUILIBRIUM SYSTEM (1)	COASTAL SYSTEM (2)
A network structure	Usually extend beyond local jurisdiction.
Several levels of organisation	Management requires involvement of many agencies at the subnational or national level of government.
Anticipating future developments	Interconnected without any one agency having control over inputs and outputs from one system to another.
Many niches filled by adapted agents	Affected by decisions and actions taken by many local users and concomitant decisions of local and subnational units of government.
State of ongoing renewal	Most coastal systems are dynamic and complex, difficult to model relationships or predict potential impacts

Table 2 Sources (1) (Geldof, 1995), (2) (Sorenson, 1997)

The interaction of these characteristics will influence the design and implementation of a chosen management system and provide the means for achieving validation to check whether there is conformity between the behaviour of the system and the real world.

ICZM needs to fit within the general resource management context requiring a combination of planning, applied research, and public education (Sorensen, 1997). Planning is distinguished from management by providing a framework for guiding decision making to reduce the influence of small decisions and cumulative impacts, political and administrative costs, and act as a forum and vehicle for community management (Sorensen, 1997). This role can extend into the natural and human resource spheres of the coastal environment acting to integrate various competing scales, values, interests and goals (Kenchington & Crawford, 1993).

Management should be grounded on the basics, creating a knowledge base, promoting understanding and public awareness, and integrating environmental concerns with sustainable development (Lawrence, 1997). Suitable methods for allocating resources and uses of the coastal zone require decision-making systems that are flexible, comprehensive, adaptive, pluralist, proactive and equitable (Lawrence, 1997).

Management practices can be improved by including a recognition that ecosystems maybe defined as types of a specific empirical unit, general empirical unit, specific theoretical construct, or a general theoretical construct. Not recognising the application of different ecosystem types will promote confusion about the management process if types are used interchangeably (Roe, 1996). Different ecosystem concepts make management more effective instead of obscuring or forcing choices of one or another.

Management reviewers (Brinkerhoff, 1996) highlight the need for flexible and informal management responses to reduce the complexity and uncertainty in resource management strategies. Social dilemma (refer glossary of terms) theory advocates behavioural and structural approaches to resolve resource issues in formulating ICZM strategies (Crance & Draper, 1996). A multi disciplinary team would facilitate a mixed approach being composed of both people associated directly with the ecosystem and/or resource ('locals') and others involved as managers or as expert advisors. Strategic vision methods (Raymond, 1996) are also useful for creating a comprehensive framework for ICZM practices to involve all participants. Formulating processes and

plans incorporating characteristics specific to the project should be completed in a timeframe before a loss of interest by stakeholders and government agencies (Post & Lundin, 1996; Raymond, 1996).

ICZM utilises boundary definition as a strategic approach designed to cover interactions within the natural [biotic and abiotic elements] and socio-economic [functions and infrastructure] subsets of the coastal environment (Vallega, 1994). System boundaries help to define the extent of external and internal interactions but definition is less important than gauging the extent of system interactions (Van der Weide, 1993; Roe, 1996).

TABLE 3: UNITS COMMONLY USED IN COASTAL MANAGEMENT

<i>Definition</i>	<i>Level of Interest</i>	<i>Expertise</i>
Exclusive Economic Zone: Water beyond territorial sea limit	High level of central government and international interest	Politicians & Scientists
Islands & Reefs: Within open waters	High level of national and local interest	Scientists & Community
Marine / Coastal Waters: Open water beyond transitional zone	High level of central government interest and authority.	Managers, Scientists, & Politicians
Transitional: Shallow waters from edge of land to open sea including flood prone areas.	High level of regional and local government interest and some central government interest.	Managers, Community, & Politicians
Shore Lands: Land directly adjacent to the transitional that has a significant effect on coastal resources	High level of local interest.	Community & Managers
Coastal Floodplains: Land between shore and upland subject to periodic inundation	High level of regional of regional and local interest.	Managers & Community
Uplands: River valley's, drainage ways, and watersheds.	High level of regional and local interest.	Community & Managers

Table 3 Source (Clark, 1996).

The aim of the table above is to highlight units for boundary definition in ICZM and to indicate the stakeholder groups likely to focus on the area.

PROCESS COMPONENTS

The ICZM framework contains elements that are critical to the achievement of policy, planning and program goals. The components of interest for this research are governance, community, iwi or stakeholder empowerment and information management. These are outlined below.

Governance

Governance is “the composite of laws, customs, and organisations established by society to allocate scarce resources and competing values ” (Sorensen, 1990) equivalent to institutional arrangements. It also includes regulations and programs for environmental control and resource use and key actors and organisations that determine and implement these. Organisations typically involved in integrated coastal management overseas include government agencies, universities, non-government organisations (Crawford *et al*, 1993), and community groups. Crawford *et al* (1993) believes that the primary goal for any organisation is to become an institution which maybe achieved through human and organisational capacity building.

Governance is a determining factor in affecting the successful implementation of ICZM (Olsen, 1993). Coastal management is influenced by administrative boundaries that would ideally be considered in terms of their reality to natural and human processes already occurring in the area and also how these processes cross outside of the boundaries of the planning area (Pernetta & Elder, 1993).

In reporting on governing institutions Hennessey (1994) concluded that:

- Institutional jurisdiction should correspond to impact boundaries as far as knowledge allows,
- Small institutions are more efficient and responsive than large institutions; they need be no larger than necessary to incorporate all relevant parties affected by a problem.
- A multiple institutional governance system is preferred for dealing with problems with potentially serious consequences;

- Complex problems are better solved by a multi rather than single agency response,
- Creating a new institution is only feasible if a favourable incentive structure exists for the participants. Prospective members must believe the advantages outweigh the disadvantages.

Effective governance, ecosystem management should be institutionalised within the government (see Gerlach & Bengston, 1994; Hennessey, 1994; Mackenzie, 1997; and Roe, 1996). The concept of interdependence must be entrenched as a function of governance to allow public inclusion in planning and decision making (refer Barrett *et al*, 1997).

New emerging institutional structures⁵ should be compared with the traditional agency institutional structure using institutional analysis to assess the existing mechanisms and potential barriers interfering with policy preparation, adoption or implementation (Clark, 1996). Governance systems and management programs that require extensive cross-sectoral and interagency co-ordination should recognise the dynamics of the ecosystem and human activities and must:

“reconcile the different values and objectives of a variety of user groups and the general public and provide the means for implementing chosen objectives.”(Hennessey, 1994:126)

Institutional development requires knowledge of the key issues affecting an organisation. A strategic planning process enables governing institutions to define issues and options that allow both formulation of a management program and structures suited to their delivery (Crawford, 1993; Clark, 1996). An informal institutional structure allows flexibility in managing the resource base (Mackenzie, 1997).

For example, designers of the Chesapeake program (Hennessey, 1994) selected a decentralised, co-operative system based on negotiation and compromise among decision-makers at federal, state and local levels. Organisational learning capacity allowed a phased process of adjustment of programs to meet changing circumstances and new information.

⁵ Refer to “the Action Team” (Mackenzie, 1997).

Coastal ecosystems internationally are often overlaid by fragmented but well entrenched systems of local, regional, and national government jurisdiction (Olsen, 1993). This is exacerbated by the differing nature of government organisations on the dry and wet sides of the coastal environment (Cincin-Sain, 1993). Clarke (1996) recommends that horizontal integration across economic and government sectors is needed to reduce fragmentation and duplication of authority and services, while Taussik (1996) suggests that best practice (as promoted by central government via consultants) could be encouraged by closer networking of adjacent coastal local authorities in a region.

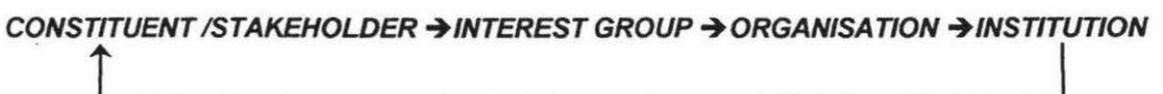
Stakeholder Involvement and Community Empowerment

*Stakeholder*⁶ is defined as “a person or entity having a vested interest in decisions affecting the use and conservation of coastal resources” (Clark, 1996). Those with an interest may be individuals, communities, user or advocacy groups, industry or commerce interests, or various scales of government regulatory agencies. This section discusses the influence of stakeholder involvement on the ICZM process and also how the process may influence stakeholders (creating empowerment by participation).

Land based industries should also participate in the planning and implementation of ICZM efforts (Raymond, 1996; Hennessey, 1994). Raymond (1996) also believes that consultation with the public and more focused stakeholders may require specific communication strategies depending on organisational structure.

The use and exact meaning of terms such as constituent, stakeholder, interest group, agency, organisation, and institution is not always clear. Institutions are distinguished from organisations by being collections of norms and behaviours persisting over time (Crawford et al, 1993). However, it may be possible for stakeholder groups to evolve into institutions over time (e.g. Forest & Bird) as indicated below.

FIGURE 3: CONTINUUM OF GROUP STRUCTURES IN RESOURCE MANAGEMENT



⁶ In New Zealand, Maori, either as tangata whenua or Iwi, are distinguished from other stakeholders under the Treaty of Waitangi. Refer Chapter 4.

Redefining the term considers the range of collective interests focused on ICZM and the fundamental need for each to perpetuate for effective sustainable management of the coastal zone.

A condition for ICZM is “effective liaison between all management agencies concerned with the coastal environment” (Rosier & Hastie, 1997) in the development of regional coastal plans. Iwi and Stakeholder involvement in the plan development stages may be assumed because of the statutory requirement to consult widely. There is little discussion about plans anticipating the future directions of Iwi or stakeholder involvement in managing coastal resources. An empowerment approach involving iwi or community groups is one method of generating participation in the management of coastal resources (Barrett *et al*, 1997). Empowerment addresses issues concerned with power relationships and interplay between iwi and agencies or agencies and stakeholders involved in ICZM. Iwi and community involvement in the management process is amenable to the governing institution if the interests of both groups are concordant. Implementation of devolved decision-making processes has had a short history, making it harder for regulatory authorities, iwi and stakeholders to accept their utility (Barrett *et al*, 1997). Lowry (1996) suggests outside appraisal by resource management experts should lean in favour of local knowledge⁷.

A facilitator may improve participation in developing resource management strategies by using negotiation between stakeholder representatives involved in joint decision making (Raymond, 1996). Establishing equality between stakeholders in plan development processes may require weighting of the relative importance amongst groups. Otherwise, interests polarised along expert and non-expert or local and outsider perspectives may destabilise attempts to achieve co-operation and mutual consideration (Raymond, 1996; Roe, 1996). The higher degree of conflict involved in negotiation compared to consultation and information sharing demands iwi and stakeholder representatives with a capability for strategic thinking and the skills, experience, and authority to adequately represent their organisation (Raymond, 1996).

A strategic vision document may then build on this by compiling and assessing constituent support (often of non-influential groups) (Olsen, 1993) or building capacity

⁷ like the ‘insider’ bias of Roe (1996)

for ICZM programs (Crawford *et al*, 1993). Public education and community mobilisation is also needed to reduce resistance from potentially affected interest groups (Post & Lundin, 1996). Often workshops can be used to reach agreement on critical issues and developing a common vision for ICZM (Raymond, 1996).

As public participation becomes widely practised mechanisms for development should accommodate the input of the general public that is non-repetitive and prevents consultation overload (Raymond, 1996). Group problem solving and negotiation can create a solution that is innovative and thorough (see “Integration”). Collaboration will not end conflict as participatory decision-making is not exclusively about mediation and trade off. This characteristic makes natural resource managers reluctant to include cultural and social concerns preferring to focus on more easily remedied technical issues due to a fear of mediocrity and the lowest common denominator (Gerlach & Bengston, 1994; Raymond, 1996).

Research, Monitoring and Information Management

Information from research or monitoring efforts is a key determinant for ICZM. Research, whether conceptual or applied, is equally important for completing information gaps in key areas at the local level. Research and monitoring would assist decision-making by providing scientific information relevant for management tools needed to consider trade offs, options and consequences of development and protection (Thia Eng, 1997). A variety of information is needed from the co-ordinated efforts of disciplines relating to legislation, social sciences, economics, ecology, public administration, coastal engineering, planning and management. This information must be relevant to management needs such as understanding interactions in coastal resource systems, identification and prioritisation of issues, identification and evaluation of strategies and actions, and development of methodologies and tools (Thia Eng, 1997).

Issues surrounding this component concern who is the appropriate agency or stakeholder to undertake monitoring, how a management system might be co-ordinated, and what is the level of technology investment, funding, or user costs. To be effective, research should provide information that supports holistic management. research requires prioritisation to complement the most immediate management needs,

especially when funding is restricted (Thia Eng, 1997). Other problems in the research process may hinder management-orientated research including:

- Perceptions by scientists that social and political decisions are the sole function of management.
- Communication of information without scientific inputs creating economic activities with serious adverse environmental effects.
- Lack of integration of traditional and indigenous knowledge about protection and management of natural resources into scientific literature.
- Lack of close functional integration of research across disciplines
- Weak technical and management capabilities of lower levels of government may prevent achievement of sustainable development (Thia Eng, 1997).

Without tying indicators to program outcomes, research oriented management will not always reduce uncertainty (Hennessey, 1994). This can be a case of science creating uncertainty through inconsistent objectives (Roe, 1996). An empirical case study approach highlights issues, keeping researchers informed about new developments and matching program logic to current theory (Clark, 1996; Roe, 1996; Mackenzie, 1997; and Curtis *et al*, 1998). Integrating broader concepts will influence the theoretical background of the researcher (Chua, 1997).

Frameworks for co-ordinating information from marine protected areas are crucial for effective coastal management (Pernetta & Elder, 1993). Any framework relies on the development of monitoring criteria for the near-shore environment (Mladenov, 1994). Consistent frameworks for marine protected areas are needed for monitoring to maximise the functions they are managed for. These are for reasons of habitat conservation, restoration, research, fisheries management, genetic conservation, education, and recreation and tourism (Mladenov, 1994). Preferred monitoring techniques should be cost effective, repeatable, non-destructive and statistically robust (Mladenov, 1994). This might construe a technology bias that prevents incorporation of iwi and local communities in the framework design process for resource monitoring. A Geographic Information System network should integrate both technological and

customary monitoring techniques with information from other sources, to allow validation of the effectiveness of management methods (Lowry, 1996).

Models describing the interactions between the resource system and the socio-economic system need to be developed for coastal management. Appropriate models are of economic (production and consumption), resource (production functions of the natural system), emission and deposition (regulatory function of the natural system) systems (Van der Weide, 1993).

IMPLEMENTATION

Policy implementation is an exploratory process of defining problems while drafting solutions (Hennessey, 1994). Implementation is the sixth step of the ICZM process (refer back to Figure 1). The discussion below emphasises conditions for successful implementation based on functional and other characteristics while acknowledging difficulties identified in literature (e.g. Sorensen (1997) comments that the implementation of ICZM is “a long swim against the current”).

Implementation of ICZM is influenced by political and legislative constraints and limited public awareness about the need for such an approach (van der Weide, 1993). Implementation can be through regulatory programs, zonation schemes for partitioning the coastal zone, management programs for resources or sites and action programs for degraded resources or coastal problems or stimulating economic development (Post & Lundin, 1996). Adopting strong regulatory measures (polluter pays/ precautionary principle) through implementing user fees, limiting access to and exploitation of coastal resources, imposing environmental impact assessment requirements and mitigating measures all require convincing justification (Post & Lundin, 1996).

Implementation of ICZM is often limited by human capacity. Education and training available for policy managers can lead to weaknesses in implementing policy through inflexibility or a lack of awareness (Crawford *et al*, 1993). Education that balances facilitation with instruction perspective can build understanding about participation, process, objectives and competence to improve management. Education requires case studies to encourage inquiry and situation diagnosis (Crawford *et al*, 1993). This reinforces the acceptance of innovation and adaptation in management styles.

Organisational capacity is enhanced when experimentation with regulations or procedure is developed in place of prescriptive guidelines, providing solutions for problems related to space, time and local culture (Agardi, 1993; Lowry, 1996).

Organisations attempting to implement ICZM after development and preparation may experience a lack of success through poor interagency co-ordination, insufficient policy or functional integration, inadequate feedback or a lack of monitoring evaluation (Crawford *et al* 1993; Olsen, 1993; Schneider & Barsoux, 1997; Thia Eng, 1997). Policy may positively or negatively influence co-ordination and dialogue when implementation actors are creating linkages between agencies and major stakeholders (Brinkerhoff, 1996). Multiple linkages form patterns and create networks of organisation and co-ordination is a function of the hierarchy in an implementation network seeking to reinforce consistency (Brinkerhoff, 1996).

Co-ordination is also important, requiring *information sharing* (communication), *resource sharing* (controlled and allocation), and *joint action* (collaboration sequentially, reciprocally, or simultaneously). Questions about co-ordination in implementation networks refer to “What do the various actors need from, and give to, each other to accomplish their tasks and objectives?”(Brinkerhoff, 1996). The network designer or manager should recognise that co-ordination will be affected by problems within and between organisations such as:

- *Threats to autonomy/ the uncertainty of interdependence*

Threats include diversity of stakeholders, different procedures among co-operating agencies, and degree of multiple and/or interlocking linkages among agencies. Co-ordination impinges on agency independence. Agencies will maintain control over inputs, outputs and operations unless there are clear and significant benefits. Also influence of *bureau politics*- agency competition, jealousy and personal ambition (Brinkerhoff, 1996).

- *Lack of task consensus*

A lack of consensus in agreement on the client groups to be targeted, actions undertaken, services provided, methodologies employed is aggravated by stakeholder diversity, multiple linkages, and a scarcity of resources. Participatory processes such as open discussions and negotiation are required to resolve differing views among partners at the same level (Brinkerhoff, 1996).

- *Conflicting vertical and horizontal requirements.*

Belonging to more than one system (common at the field level) frequently places members of the co-ordinating unit into conflicting demands. Difficult when legislation imposes barriers limiting agency flexibility. Resistance to co-ordination if resources diverted from preferred activities. Many connecting threads heighten the probability of conflict (Brinkerhoff, 1996).

These problems can be resolved by strategies for implementation networks that:

- Concentrate agencies to understand and accept strategic objectives. Provide incentives and guidelines.
- Reward collaboration and co-operation rather than a single institutional goal.
- Create win-win opportunities for co-ordination. Institutional incentives (joint benefits and *value added*) rather than sanctions and hierarchical policy.
- Reduce tight dependencies of administrative integration. Less frequent reporting, operational autonomy, informal collaborative agreements, and less information for existing frameworks are needed.
- Shorter planning and implementation cycles. Using a mix of hierarchy and market mechanisms allows better adaptive management.
- Build performance capacity gradually. Building sustainable capacity is a long-term endeavour. (Brinkerhoff, 1996).

Successful implementation networks are combinations of authority building the network outward and downward and co-ordination of market mechanisms to correct for bureaucratic failure. Combining the hierarchical and market implementation networks utilises the efficiencies of each system. There must be sufficient institutional strengthening to prevent 'market failure', where agencies act according to their own preferences and do not achieve the overall strategic goals (Brinkerhoff, 1996).

Networks function successfully when individuals can operate independently within limits imposed through supervision and control mechanisms, and resource interdependencies (Brinkerhoff, 1996).

Using adaptive techniques to enhance ICM programs is based on the practice of issue analysis, that is the exploration, definition and evaluation of the resource management issues to be examined by the management program (Clark, 1996). The result from this analysis could be a complete planning and management strategy for one situation or problem being issue or place-specific. This approach recognises the benefits of providing a mechanism that focuses management onto a separate resource conflict rather than forming a solution through the provisions of a centralised program with generic regulations and nation wide standards. "Situation" (Clark, 1996) or "Special Area Management" (Lowry, 1996) builds on these ideas for resolving user conflicts in resource conservation and development situations when setting up community management. This approach allows an iwi or local community to accept a custodial role over a coastal resource maintaining a sense of ownership and increasing the potential for sustainable management of the resource as the resource exploiters are brought into the management process. Competing demands over the resource are resolved by management in a mediating process among the competing users by building a consensus on compatible uses, (Clark, 1996).

It can combine with management strategies to preserve traditional or customary use arrangements. Traditional uses might be integrated into coastal management programs by using a custodial approach designating a marine protected area with joint local and government authority, regulatory approaches, or a combination of approaches. Conferring property rights over common property resources to a local authority can avoid depletion problems.

Vallega (1994) notes that most coastal uses are consistent with sustainable development, but vary in this respect according to technology, organisation and interaction with other users and factors. The sustainable development framework can be considered adaptive based on a nested classification using feedback (Vallega, 1994). Implementation is influenced by the role of discriminants (refer glossary of terms), relations between uses, conflicting relationships and use-ecosystem relationships. Understanding the relationships between uses and the relations between use and ecosystems requires a matrix to delineate the cumulative effects of converging uses and impacts as part of a coastal use framework (Vallega, 1994:112).

A multi-layered approach to determining implementation and management responses for coastal uses complements reviews of the ecosystem management concept (Mackenzie, 1997; Roe, 1996). If ecosystems are complex, then so must management be complex. Implementation of an ecosystem management approach requires that functional boundaries parallel ecological boundaries, rather than arbitrary political units (Mackenzie, 1997).

EVALUATION

Evaluation assesses performance by providing information about the success or failure of strategies and mechanisms in the implementation of coastal policies. This requires indicators selected on criteria that examine either the policy process or its outcomes (Sorensen & McCreary, 1990). Process evaluation measures how policy goals are achieved using indicators like the clarity of goal statements and legislative mandates, annual budget allocations, and agreements relating to interagency co-operation (Sorensen & McCreary, 1990). Outcome evaluation surveys the ability of the program to meet its goals. Indicators for this type of evaluation may either be of instrumental factors (information transfer, amount of public participation, awareness raising) or of environmental and/or socio-economic conditions (amount of protected conservation estate, number of jobs created)(Sorensen & McCreary, 1990; Curtis *et al*, 1998).

Problems with evaluation are characteristically either assessing outputs without connecting these with program outcomes, or measurement bias resulting from a lack of understanding of agency strengths and weaknesses. Indicators may be chosen on a basis of prioritising management issues but must maintain clear links between policy implementation and outcome (Hennessey, 1994; Sorensen, 1997). Evaluation during implementation applies new information to remove uncertainty, redefining goals despite poor knowledge (Hennessey, 1994). Evaluation techniques⁸ can analyse organisational performance to understand the factors enhancing or impairing planning and management activities. Weighting the environmental, social and economic implications against conflicting uses encourages consistency of objectives between affected and neighbouring communities (Vallega, 1994). Stakeholders must agree on indicators for

⁸ External, user, performance, and situation evaluation (Sorenson, 1997).

measuring performance and require open decision making and freedom to access information.

Other potential weaknesses of ICZM include inconsistent definition of geographic boundaries, limited application of ecosystem science in decision-making and fund allocation, poor economic data in accounting for activities occurring in the coastal zone, inadequate funding or staff for monitoring and enforcement, and in the development of a consistent basin wide approach to identify and protect important biological diversity features in the region (Lawrence, 1996). US State coastal zone management programs are generally perceived by academics and coastal interest groups (Knecht *et al*, 1996) as performing “well” in managing issues relating to protection, access and hazards. But in managing development both groups rated the coastal zone management programs as being handled “poorly”.

Stakeholder evaluations of coastal management programs usually target increases in public support, scientific input, enforcement and levels of funding (Knecht *et al*, 1996). The goal for evaluation of ICZM in organisations and institutions should be to provide direction for a co-ordinated strategic vision based on a long-term management perspective that deals with the range of issues integral to coastal ecosystems. Coastal management must be based on an assessment of what the coast is and what it means to society (Lawrence, 1997).

INTEGRATION

Integrated environmental management mechanisms have been implemented in many countries. Two examples are briefly discussed here to indicate characteristics useful for developing ICZM in the Hauraki Gulf.

A strategic vision process to consider the direction for the next decade was designed through a futures project by the Great Barrier Reef Marine Park Authority. A strategic direction was set to meet diverse interests and users and gain a mutually agreed future to ensure the ecologically sustainable use of the Reef (Raymond, 1996). The strategic direction was based on principles that incorporated consideration for a healthy environment, sustainable multiple use, the maintenance and enhancement of existing values, integrated management, knowledge based but cautious decision making and an

informed, involved and committed community. A strategic plan was developed using a long term (25 year) set of objectives and strategies, and a short term (5 year) set of objectives, strategies and performance indicators (Raymond, 1996).

In Madagascar, the National Environmental Action Plan (NEAP) was implemented through a 'hub' implementation network of government, agencies, non government organisations and community groups by the National Office of Environment (Brinkerhoff, 1996). The NEAP designers approach to co-ordination employed a strategy provided a flexible institutional framework, progressive implementation punctuated by periodic review, feedback for monitoring and evaluation, and a supportive policy environment.

CONCLUSION

The following conclusion explains the meaning and practice of ICZM and ICM. It outlines the criteria used in this research investigation.

Integrated management evolved from a realisation of interdependence in contrast to historic single and multi-sectoral management practices. The **evolution** of ICZM arose from integrated environmental management, ecosystem management and adaptive management in conjunction with systems theory. ICZM shares similarities with Integrated Coastal Fisheries Management and has been implemented in the United States and Australia.

The **definition** of ICZM relates to recognition of the interconnections between physical and social systems using criteria that assess:

- Compatibility of horizontal and vertical, land and sea, multidisciplinary, management and research dimensions to maximise benefits and minimise conflicts (*Topic 1- Understanding Integrated Coastal Management*).
- Concept translation (*Topic 3-Theoretical Concepts*)

ICZM **issues** relate to competing and conflicting uses internally and externally to the coastal environment. Criteria assessed include:

- Multidisciplinary viewpoints (*Topic 2-Approach to Planning & Goals*), enhancement of the collective vision (*Topic 11-Legislative Support*)

ICZM requires a **process** of defined steps and iterative feedback to distinguish planning and management as strategic, comprehensive and adaptive. Process criteria are:

- Adaptive versus reactive, cross-boundary (*Topic 4-Response to Change*)
- Uncertainty and innovation (*Topic 5-Achievement Processes*)

Process Components crucial for ICZM relate to Governance, Stakeholder (including iwi) Involvement and Community Empowerment, and Research, Monitoring and Information Management. Criteria are:

- **Governance-** Flexibility (*Topic 10: Institutional Arrangements*),
- **Stakeholder and Community Empowerment-** Clarity of objectives and effective consultation (*Topic 2-Approach to Planning & Goals*), incentives & barriers for participation and stakeholder buy in (*Topic 12-Measuring Participation & Support*),
- **Research, Monitoring, and Information Management-** Database quality, sensitivity, communication and prioritisation (*Topic 9-Information Needs*).

Successful **implementation** requires effective structures to share experience and knowledge about achieving planning and management goals. Implementation criteria are:

- Effective Links (*Topic 6-Networks & Structures*)
- Education & knowledge transfer (*Topic 7-Promotion of Integrated Management Practices*).

Evaluation is necessary to assess the success or failure of management efforts to achieve ICZM by the use of indicators of either process or outcomes. These measure the efficiency of linkages and co-ordination and their role is in ensuring mandated goals concerning coastal resources are met. Evaluation criteria include:

- Assessment techniques that evaluate processes used to resolve issues/problems (*Topic 8-Performance & Feedback Mechanisms*).

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

INTRODUCTION

The discussion in this chapter focuses on research design and methodology. The theory of Action Research will be introduced and its definition, origin, process, strengths and weaknesses relating to its influence on the process and researcher will be discussed. Action research is shown as the most applicable methodology for exploring integrated coastal management in the Hauraki Gulf.

The Hauraki research process is justified in terms of adapting the action research framework, influences on the researcher, and applicability of research to integrated coastal management in New Zealand. A discussion of the study limitations is also addressed.

Action research is the best available approach given the objectives of the thesis (Chapter One), the nature of integrated coastal management and the environment (Chapters Two & Three). This is shown in Table 4 that compares similarities in the relationship of research, subject, and theory in an action research approach. The purpose is for the reader to gain a sense of the qualitative links requiring integration between these paradigms through an action research approach.

TABLE 4: COMPARISON OF METHOD, SUBJECT AND THEORY¹

Action Research (Method)	The Dominant Institution (Subject)	Integrated Coastal Management (Theory)
Horizontal relationships	Hierarchical, vertical relationships	Horizontal and Vertical Relationships
Unified, collaborative across subject boundaries	Divided, compartmentalised (subject based)	Holistic, Cross-sectional, and Multidisciplinary (issue based)
Democratic, bottom up management style	Bureaucratic, 'Top-down', management style	Consensual, Top down and Bottom Up management styles
Open	Closed	Open
Informal Relationships	Formal Relationships	Formal and Informal Relationships

Action research is also considered to be the best method because it shares fundamental characteristics with ICZM. The process is systematic and strategic, comprehensive and adaptive. Action research is a systematic and strategic method (refer Figure 2) differentiated from action by a series of definite steps and from research by the iterative

¹ After Winter, 1987:90.

feedback between these. The Institution is a systematic and strategic instrument by virtue of its potential for organisational capacity (Crawford *et al*, 1993). Next, Action research is comprehensive by relying on the wider participant involvement to develop a solution. Institutions will remain durable by solving issues/problems based on comprehensive assessment and a multidisciplinary approach (Raymond, 1996; Lowry). Integrated coastal management is comprehensive by virtue of its adherence to a multidisciplinary approach to resolve issues and problems (Kenchington & Crawford, 1993). Finally, action research is adaptive because it is a balance between the directives of action and research for application to a given situation without predetermined methods (refer Table 4). Coastal management institutions can become adaptive as a response to external and internal influences to maintain their future durability (Hennessey, 1994). Integrated coastal management is an adaptive theory based on its recognition of uncertainty using an iterative process model (Cicin-Sain, 1993).

ACTION RESEARCH: DEFINITION AND ORIGINS

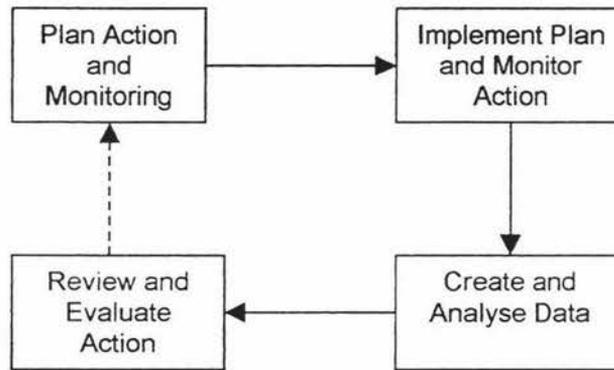
Action Research is defined as “a systematic inquiry that is collective, collaborative, self-reflective, critical and undertaken by the participants of the inquiry.” (McCutcheon & Jung, 1990: 148).

Action research derives from “Action Inquiry”, an umbrella concept for social science research differentiated from other methods by deliberate experimental action based on and monitored using recognised research procedures (Tripp, 1996). The methodology has developed in response to criticisms of positivism and scientific method and ambiguities in objective measurement and rigidity of research institutions (Winter, 1987). It incorporates a critical science perspective in being concerned with questions about authenticity, alienation and the ownership of knowledge (McCutcheon & Jung, 1990; Tripp, 1996).

The action research process in Figure 4 is distinct from current practice because each phase of the research methodology has a definite beginning and end expressed in a formal manner (Winter, 1987). This separates the evaluative feedback of action research from everyday evaluations of practice by a more scientific procedure which builds action and criticism into an integrated whole (Winter, 1987). Separation of each phase is particularly important if the research and action are both conducted by the practitioner.

FIGURE 4: THE ACTION RESEARCH PROCESS

(Source: Tripp, 1996)



Key Characteristics of Process

Investigations with an action research orientation are characterised as:

- *Cyclic*: Research is undertaken as phases of experimental action in similar sequence. Improving the understanding of participants and the researcher will occur by designing an iterative feedback process into the methodology in contrast to the static control pose of alternative research methods (Winter, 1987).
- *Reflexive*: The self-reflective formation of self-awareness through interaction and evaluation in which participation has been chosen as the best available research method for the questions addressed in this thesis. It enables the reviewer to be provided with “useful and adequate information about the action taken, and whether the information has provided a sound basis for further action.” (Tripp, 1996).
- *Participative*: Action research is a collaborative effort with the researcher and subjects working together to better understand their own practice (Winter, 1987). Those involved contribute both to the creative thinking (what is investigated, the methods, analysis of findings) and to the action that is the subject of the research (Reason, 1995). Methods supply feedback and encourage the co-researchers to shape the final recommendations for management practices. This is probably the most difficult aspect to include in a project which is also written as a thesis.
- *Qualitative*: Action research relies on interpretation “from the point of view of those acting in the problem situation... in the same language as they used” (Winter, 1987)

and not by generalised situations. Action research assesses the relationship of the researcher to the research by observing “action’s complex moves in its habitat” (Winter, 1987).

Strengths and Weaknesses of Action Research Framework

Action research characteristically influences both the process and researcher through combining the positions of research and practice (Winter, 1987). Scientific expertise based on prior generalities is usually in opposition to the practice of actions relevant to a unique situation (Winter, 1987). The strengths and weaknesses of any action research approach are identified in the unification of these extremes (Winter, 1987) and Table 5 summarises these under five criteria.

TABLE 5: STRENGTHS AND WEAKNESSES OF ACTION RESEARCH

	Strength	Weakness
1-Reflexivity & Dialectics		
<i>Process</i>	Questions process and subject as ongoing iteration +	Study is never completed +
<i>Researcher</i>	Sharing in a common perception or viewpoint +	Maintaining collaborative relation without losing goals +
2-Action & Research		
<i>Process</i>	Shared but separate goals +	Balancing separation and collaboration +
<i>Researcher</i>	Researcher integrated into the system +	Must carefully distinguish subjective and objective views +
3-Critical Reflection		
<i>Process</i>	Interpret theory onto action +	Ambiguous relation between experience and evaluation +
<i>Researcher</i>	Awareness of institutional bias +	Requires self awareness of institutional determinism +
4-Improving Professional Practice		
<i>Process</i>	Ownership of process and results ++	Concentration on questions that can be solved and methods that get results **
<i>Researcher</i>	Gain knowledge from participant subjects +++ Adherence to collaborative ethic to better practice +	Imbalance of decision making between expert and non-experts ++
5-Problems of Validity		
<i>Process</i>	Encourages diversity of overlapping viewpoints +++	Unsure of methods in open ended inquiry +
<i>Researcher</i>	Combines authority of research blended with case study +	Balance bias and imprecision with accuracy +++

Table sources; + Winter (1987), ++ McCutcheon and Jung (1990), +++ Reason (1995), and ** Van Manen (1990).

Table 5 looks at five criteria; reflexivity and dialectics, action and research, critical reflection, improving professional practice, and validity presenting the views of various authors about the strengths and weaknesses of the action research framework. For example, action research provides for ongoing iteration of process to enable incorporation of new information and attitudes. But there can be difficulty in defining an endpoint to the process and therefore the study. This characteristic reflexivity measures research as a provisional accomplishment inviting continued improvement. Dialectics enhances ongoing iteration by distinguishing between research, the product and its perception (Winter, 1987). Action research combines discovery (research) and implementation (action) by the translation of research findings into a creative rather than casually determined response. Critical reflection assesses subjectivity of the researcher based on cultural and unconscious structures that question the rationality of the subject and is enhanced by knowledge discovery by co-participants (Winter, 1987). Action research improves professional practice by the sharing of knowledge, views and opinions of co- subjects from experiential (co-subjects understanding themselves), propositional (co-subjects communicate theory to others), and practical (co-subjects better able to act) realms (Reason, 1995).

Acknowledging the inequality of knowledge can empower and enhance the creativity and independence of co-researchers (Reason, 1995). ICZM seeks to empower participant groups and is a mechanism for improving the practice of stakeholders (Born & Sonzogni, 1995). Inequalities existing between expert and non-expert co-researchers increase the risk that all key decisions and interpretations would come from experts (Reason, 1995). Collusion for expediency may also move the research further from co-operation (Reason, 1995). The action research process is linked to developments in planning theory by an articulation of a need for consensus and agreement between research and action. This is also linked to ideas such as communicative rationality by Habermas who views the core of this concept as “unconstrained and unifying” (Douglass & Friedmann, 1998). Action research questions validity based through human experience and of human judgement (Reason, 1995) and seeks a practical accuracy given the aims and purposes of the project, the situation, and the existing state of practice (Reason, 1995).

Influence on Researcher

The role of the researcher in the Action Research framework is to define problems and convince participants of their relevance (Winter, 1987). Analysis explores contradictions within action and research and leads to 'enlightenment' of researcher and participants. Researcher and 'researched' are defined by different life situations as the former has a theoretical competence that the latter lacks. Winter (1987) also believes that action research lends authority to the professional practitioner in 'people-processing' organisations because it uses a version of inquiry that mediates between the prescriptive authority of science and the unique experience of the individual case. The theorist becomes a collaborator acting with the subjects of the research co-operatively. Therefore experimental conditions do not need partialling out or controlling.

The theoretical authority of a research stance must be distinguished from the institutionalised power of research initiatives, in terms of political, economic, and ideological influences otherwise cases become situations where the practitioner's efforts may only take the form of self-evaluation. This brings the question of what version of subjectivity allows research and action carried out as a dialectic of self-transcendence by one person? The evaluative preferences (Lowry, 1996) held by the researcher can reduce the validity of the research product as bias may emerge in assessing action from criteria not part of the research (Winter, 1987).

Selection of Research Methods

The application of action research requires methods that builds on the strengths and minimise the weaknesses of the approach. Methods used must also fit within the circumstances of this particular situation i.e. involving a cross section of viewpoints requiring validation and evaluation. Research design integrates methods complementing the action research framework.

Action research encourages a semi-structured or unstructured interview style allowing the respondent to answer outside of a structured format (Burgess, 1984) to satisfy a need for participant ownership of knowledge (refer Table 5). Structured interviews are usually inappropriate as the respondent is placed in a subordinate role in the process (Burgess, 1984). Unstructured interviews were also not considered as suitable in this study because the interview material was required to relate to latter analysis by criteria

constructed from the literature review. A semi structured interview style is most useful because topics concentrate discussion on the issues but allow a response based on the participant's own perspective (Burgess, 1984). Non-directive questions (semi-structured or focussed interview) require *probing* to encourage the respondent to clarify and amplify an answer necessary to discern comparable and codeable answers (May, 1993).

A literature review determines the characteristics of Action Research and what would be a credible process to initiate and follow. The case study model demonstrates the context of this research within the Hauraki Gulf and shows the applicability of action research theory. The case study is not just illustrative of a potential successful outcome but is also descriptive of the process used to get there. Case study models are used to integrate action research. Co-operative inquiry explores hidden agendas as a process of articulating roles to determine issues and solutions, and by sharing understanding of participants, collaborative relationships are built (De Venney-Tiernan *et al*, 1994, Traylen, 1994).

LIMITATIONS OF STUDY

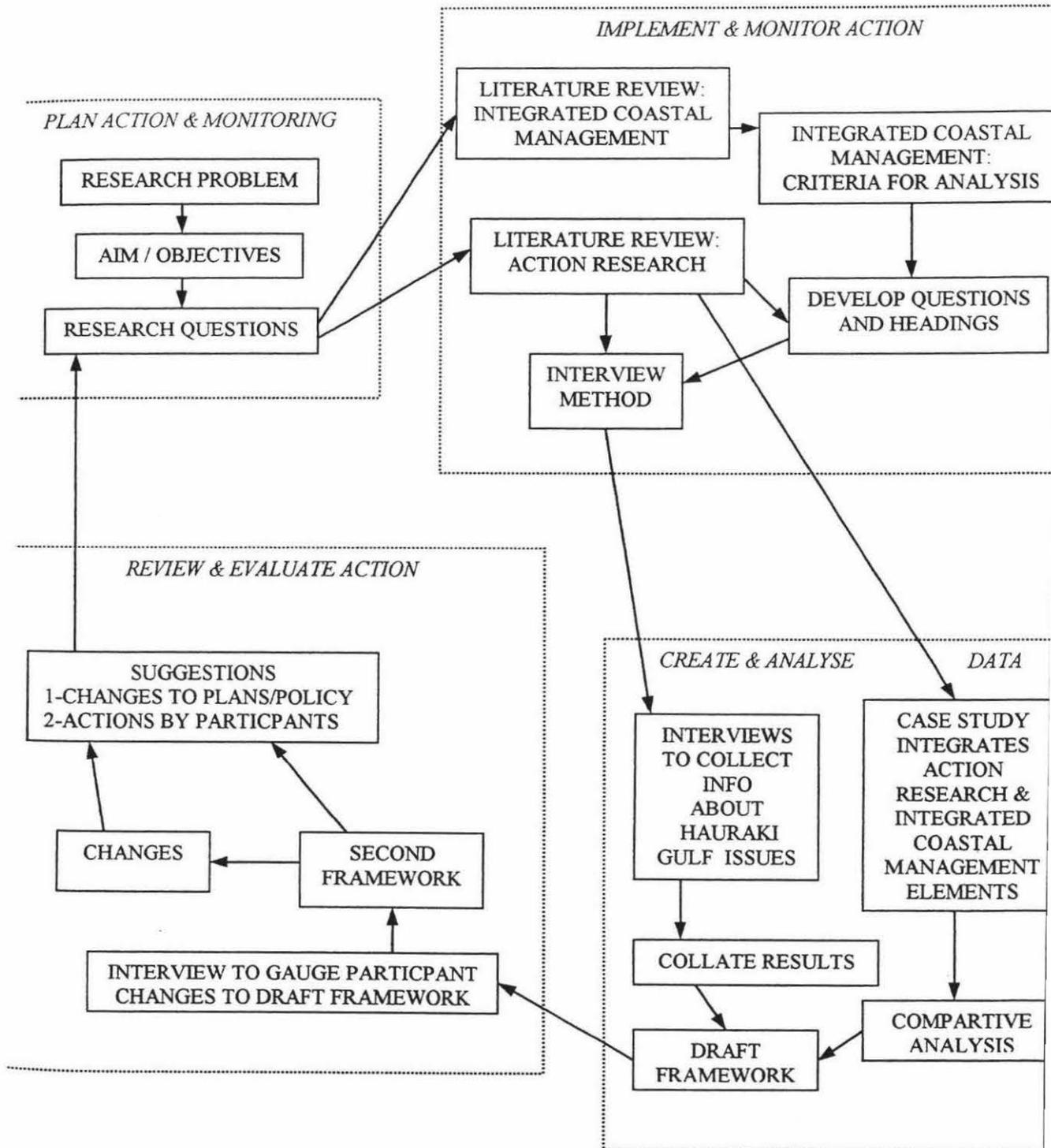
Limitations to the research are derived from external (time constraint) and internal conditions (i.e. interviewee participation) that will be discussed below.

Reiteration is one of the central features of Action research. The short period for research has limited the time available for the reiteration phase necessary to test the results of analysis (Chapter Five, Six and as discussed above). This is an area for further research (refer Chapter Seven).

Interviews were sometimes problematic in that one to two hours of tape not always enough time to cover all the responses or technical failure of the tape machine. Participants often had other commitments following the interview. Some participants that were unavailable or could not be contacted during the interview phase and fall outside the scope of this thesis (e.g. Department of Conservation (Auckland Conservancy), Franklin District Council, Hauraki Maori Trust Board, Waikato Conservation Board and commercial fishing or aquaculture companies). The Hauraki Maori Trust Board participant did not wish to be taped. Many participants were uncomfortable at letting their thoughts being made open for comment by others and requested that their views be treated confidentially.

Respondents were sometimes confused by the meaning of terms used or treated questions as absolute rather than indicative of the topics and often rambled. Some respondents complained of jargon particularly those from a non-agency or volunteer perspective. Participants were facilitated in expressing their views in their own words.

FIGURE 5: RESEARCH METHODOLOGY



RESEARCH PROCESS

The research process consists of ten key steps proceeding through the first cycle of framework development. Steps taken by the researcher are described briefly below. Research objectives for this study are:-

- (i) To apply theoretical knowledge of ICZM and practical knowledge from the interviews.
- (ii) To build a theoretical framework of achievable ICZM that could improve upon the existing New Zealand coastal management scenario.
- (iii) To assess the current state of ICZM in the Hauraki Gulf.

The following outlines the phases of the interview process methodology. These were:

1 Gather List of Key People/Organisations & Contact

The literature review highlights ICZM as an inclusive process. To evaluate the Hauraki Gulf, twenty people representing central government, local government, commercial and voluntary interests (Appendix 2) have been interviewed. Within the group roles included policy formulation and implementation, and management or operation of use and extractive activities within the Hauraki Gulf coastal environment. Selection was based on participants being involved as leaders and/or providing a unique information source. They have been asked for knowledge and insights into their situation (Krathwohl, 1993) without any actual assessment as to their suitability. The relevance of including a particular perspective is based on each participant being able to serve as a validity check for the product and outcomes of this research.

Initially letters are sent out asking people for their participation in interviews. The aim of the letter is to inform the recipient of the purpose and benefits of this research for the Hauraki Gulf and coastal management in New Zealand. A letter outline is included in Appendix 5. Participants are then telephoned or e-mailed to enquire if they agree to an interview. The telephone call is also used to organise a meeting place, time and date.

2 Design Questions from Theoretical Review

The headings and questions for discussion with interviewees are derived from key

subject areas outlined in the ICZM literature review (Chapter Two). The questions are intended as guides for interviewees to discuss issues and concerns in their own words. Action research requires participant involvement and is important in the context of a thesis researching the links and issues between various actors involved with coastal resources and management. Technical language and jargon is avoided where possible or explanations of term are offered during the interview.

3 *Conduct Interviews*

Interviewees are initially informed that the interview is confidential before it takes place.

Interviews clarify the expectations of context and roles adopted by participants in the Hauraki Gulf research. The interviewer must make the subjects feel that their participation and answers are valued, and fundamental to the conduct of the research. The initial stakeholder interviews assess the diversity of issues among groups interested in the management of coastal resources of the Hauraki Gulf. The second phase interview aims gauges participant response to a theoretical management framework for the Hauraki Gulf. This followed the process of an unstructured interview moving through phases of rapport (building trust), exploration, co-operation, and participation.

4 *Collate Interview Material*

Information from interviews was transcribed into a laptop computer (refer Appendix 7). Transcribing tape-recorded interactions enables the researcher to move backwards and forwards through an episode (May, 1993).

In this case study, tape recording ensures that the interviewer does not misrepresent participants views (May, 1993). Disadvantages include “voluminous records”, often difficult to hear (two persons talking at once, disturbing noises, voices too far from the microphone, etc.) and containing considerable material not applicable to the study (Krathwohl, 1993). Taped material is then analysed using categories from Chapter Two by searching for keywords (May, 1993). Each transcription takes approximately 7-8 hours and includes a second hearing to correct the typed material. A full hard copy collection of transcribed tapes is available for further reference.

5 *Design Preliminary framework*

An interactive feedback component is essential to the integrated management process (Born & Sonzogni, 1995, page 5) and meeting action research criteria for participant involvement in the ownership and outcomes of the thesis (Winter, 1987). A preliminary framework is presented to participants after collating the responses from the first interview. This iteration will indicate areas for improving the framework design and also make recommendations for changes to policy and plans and actions to be undertaken by the participants (refer Appendix 4 for a list). Iteration in the Hauraki Gulf case study also ensures that practitioners are aware of the theoretical ICZM concepts and the researcher is aware of practical considerations.

6 Analysis

Content analysis is determined by criteria outlined in the conclusion of Chapters Two and in Chapter Six intended to provide data triangulation to support findings and/or results. Explaining an inconsistency may lead to new insight about the issue/problem or the required action (Krathwohl, 1993). Analysis will assess interviewee perceptions of “flexible institutional structure” (Hennessey, 1994) and implementation networks as *informal, articulated, complementary, and co-ordinated* (Brinkerhoff, 1996) for achieving ICZM. This is by an approach assessing change influencing target groups, innovating organisations and interactive settings (Wolcott, 1990).

7 Final Framework

Discussions with key stakeholders are likely to modify elements of the preliminary framework. Elements within the theoretical framework not considered relevant to the process for Hauraki coastal management will not necessarily be discarded from the final product. These will fit in as ‘dormant’ factors, ready to become operative if they are deemed through latter evaluation to be crucial to the coastal management process.

CONCLUSION

The thesis research process based on action research principles (collective, collaborative, self-reflective, critical and participative) concerning effectiveness of integrated coastal management for the Hauraki Gulf is outlined. The process for this thesis is outlined in ten steps undertaken to formulate a framework for improving ICZM practices.



CHAPTER FOUR: ICZM IN THE HAURAKI GULF

INTRODUCTION

This chapter outlines an ICZM framework in the New Zealand context, using the Hauraki Gulf and Firth of Thames as a case study. The discussion consists of a brief summary of the physical, cultural and social values, previous historic management, and the current legislative and administrative background for coastal management in the Hauraki Gulf. This provides an ICZM context for New Zealand which allows comparisons with international ICZM directions.

MAPS

Two maps are included in this case study. Map One illustrates the physical environment that requires integrated management including catchments, coastal seas and areas protected from use or development. Map Two illustrates the administrative boundaries of central and local government areas and tangata whenua areas of interest. Both maps are included in Appendix 9.

PHYSICAL CONTEXT

The Hauraki Gulf has been defined as the coastal marine area on the east coast of the Auckland and Waikato regions including the Firth of Thames, the islands and catchments draining into the gulf as far as the Waihou river headwaters (HGMPB, 1998). This definition does not include the outer Hauraki Gulf environment extending north to Bream Head and the Poor Knights Islands.

The Hauraki Gulf includes approximately 13600 square km of semi enclosed marine waters. The Hauraki Gulf has outstanding natural values as documented by the Department of Conservation (DOC, 1995; DOC, 1993) and regional councils (ARC, 1995; EW, 1994). Islands are used as reserves to protect flora and fauna that can not exist on the mainland (e.g. Little Barrier Island). The Firth of Thames contains values recognised as regionally, nationally and internationally significant (EW, 1994). Various terrestrial parks and reserves are managed by regional councils (e.g. Hunua Regional Park), or the Department of Conservation (e.g. Great Barrier Island). There are also marine reserves covering the inner gulf waters (e.g. Moru Manawa-Pollen Island)

through near shore (Cape Rodney-Okakari Point) to offshore (Poor Knights Islands) environments. Territorial authorities also maintain reserves within the gulf (e.g. RDC control a reserve next to Cape Rodney-Okakari Point).

CULTURAL, ECONOMIC & SOCIAL CONTEXTS

The Hauraki Gulf, or Tikapa Moana is a significant taonga for tangata whenua. Hauraki iwi have occupied lands about the gulf for over 800 years. It is also valued as an arrival point for the Arawa and Tainui canoes (HGMB, 1983). Tikapa Moana and the surrounding catchments provided transport routes, raw materials and physical and spiritual sustenance. Iwi represented in the region include Ngati Whatua, Ngati Mahuta, Ngati Whatua Ki Tamaki, Ngati Tai, Ngati Paoa, Ngati Tamatera, Ngati Maru and Ngati Whanaunga (Blue, 1992) (map 1).

The economic wealth of the Hauraki Gulf is based on fishing, marine farming, tourism, recreational, and marine transport activities. The gulf fisheries resource is of regional and national importance and is managed as a separate fisheries zone. Individual species quota is allocated within an area extending from the west coast of the North Island to the Eastern Bay of Plenty (map 2). The commercial fisheries for snapper, flatfish, kahawai, gurnard, trevally, john dory, grey mullet and kingfish earned a total of \$23.3 million in 1991 (MAF, 1991). Commercially dredged Scallops, mussels and oysters produced by marine farms are worth \$26 million annually (MAF, 1991). Marine farming, particularly for mussels, is expected to increase substantially (EW, 1996)

Recreational fishing in the Gulf is a significant activity for an estimated 60,000¹ private boats. Gathering shellfish and fish is an important customary activity for tangata whenua, Polynesian and Asian immigrants.

Tourism is projected to grow (MOC, 1992) based on the large boating population and increasing use of commercial ferryboat services. The establishment of marine reserves for conservation purposes is increasingly seen as a recreation and tourism opportunity (HGMPB, 1983).

The Hauraki Gulf is also the site for New Zealand's largest port and provides a passage for freight and cargo carrying ships. Ports of Auckland is undertaking to enlarge its

capacity and requires the Gulf as a dumping ground for dredging spoil taken to deepen the harbour (MOC, 1992; POA pers com, 1998).

Auckland's regional population growth has created issues that adversely impact the Hauraki Gulf environment. These include loss of natural areas to human settlement, destruction of cultural sites, fish and shellfish depletion, point and non-point source pollution (storm water runoff, solid waste, untreated effluent, increased sedimentation within catchments) (Blue, 1992; DOC, 1993; EW, 1994; ARC, 1995; DOC, 1995; PCFE, 1998).

PAST MANAGEMENT

Past management regimes could serve to guide the present day framework (see below). The relevance for integrated coastal management is to demonstrate that two different approaches to coastal management have existed in New Zealand.

Maori

The integrated environmental management practised by tangata whenua was based on recognition of both human material and spiritual dependence on the environment of the Hauraki Gulf (Blue, 1992). This relationship was exercised through ties of kinship that linked the environment and humanity (Given, 1995). Management practices² are a function of *kaitiakitanga* (custodial care) and *whanaungatanga* (kinship obligations) and acknowledge the significance of historical, spiritual and emotional factors as equal to the physical view of a resource. Obligations preserve the spiritual life force (*mauri*), balancing the demands of protection & kinship with the need for ongoing growth and development. This requires interaction with the environment in a positive and creative way, mitigating harm by enhancement in appropriate ways (Given, 1995). Linking the spiritual and physical dimensions of natural resources is a characteristic of sustainable development (Baines, 1989). Maori integrated management illustrates a significantly different perspective:

“Making known something beyond the object itself and facilitating the understanding and meaning of an abstraction” (Given, 1995:885).

¹ Auckland Regional Authority, 1983

This is comparable to the traditional European world-view where:

“Nothing is regarded as merely an isolated object to be considered only for what it is in physical terms” (Given, 1995:885).

Maori cultural values and interests are addressed in the RMA, providing the potential for the development of a bicultural environmental ethic that incorporates European and Maori perspectives within the current legal framework. Potentially conflicting values of different stakeholder groups are brought together into legislative processes (Given; 1995: 884). It is considered that the provisions within the RMA³ are a clear indication that Maori have a special status and are not to be considered as just another interest group. The contribution of Maori to the sustainable management of their ancestral resources is to be given due regard by decision-makers (Bradly, 1996).

Hauraki Gulf Maritime Park

European colonial coastal management practices involved multiple agencies and conflicting legislation that allowed the continuation of activities until disaster levels were reached (Blue, 1992). The establishment of The Hauraki Gulf Maritime Park and administrative board under an Act of Parliament in 1967 sought to counter sectoral interests by managing individual islands and coastal property under Crown or local authority control. The Act specifies that:

“the function of the Board shall be to administer, manage and control the Park in accordance with the provisions of the principle Act and this Act and the means at its disposal in such a manner as to ensure to the public the maximum proper use and enjoyment of the Park consistent with the preservation of its natural features and the protection and well being of its flora and fauna.”

Management aimed to protect terrestrial environments but could also be extended to include the foreshore to the Mean Low Water Mark under the authority of the Reserves Act 1977 (HGMPB, 1983). The Conservation Law Reform Act (1990) disestablished the Hauraki Gulf Maritime Park and its board transferring management responsibility to the Department of Conservation.

² Tapu, rahui..

³ Refer RMA sections 6(e), 7(a), 8 & 33.

CURRENT INSTITUTIONAL CONTEXT

Statutory and administrative mechanisms are discussed in regard to vertical and horizontal integration of coastal management for natural and physical resources of the Hauraki Gulf. Four crown ministries, one government department and twelve local authorities share policy and management responsibilities for the Hauraki Gulf and its surrounding catchment. These are described below.

The Resource Management Act 1991

The Resource Management Act (RMA) has various provisions that affect integrated coastal management for the Hauraki Gulf. A table below summarises the key provisions described latter in the text.

s.2	Definition of Coastal Marine Area
s. 5, 6, 7, 8	Purpose and Principles
s. 12	Restrictions on Use of Coastal Marine Area
s.28	Functions of Minister of Conservation
s. 30, 31	Functions, Powers & Duties of Local Government
s.32, 33, 35	Alternatives, Transfer of Powers, Gather Information
s.42	Protection of Sensitive Information
s.56-58	New Zealand Coastal Policy Statement
s.59, 62	Purpose & Contents of Regional Policy Statement
s.63(2)	Purpose of Regional Coastal Plan
s.72, 74	Purpose and Matters Considered for District Plans
s.82	Inconsistencies between Plans
s.117-119	Restricted Coastal Activities

The purpose of the RMA is the sustainable management of physical and natural resources. It indicates that sustainable management is influenced by social, economic, biological, and cultural considerations. The Act requires the preparation of national and regional policy statements, and regional and district plans to address the resource management issues and formulate appropriate policies to deal these. Regional and territorial authorities must provide for the integrated management of the effects of use on natural resources⁴.

⁴ Ss. 30, 31 RM Act 1991.

New Zealand Coastal Policy Statement

The New Zealand Coastal Policy Statement (NZCPS) is a national policy statement required under the RMA (table 1) and prepared by the Minister of Conservation representing the prescriptive policy expectations of the government (Bradley, 1996). It outlines principles for the sustainable management of New Zealand's coastal environment under policies stating circumstances for restricted activities. 'Coastal environment' is undefined in the RMA, but recognised by the courts. The NZCPS is to be implemented within Regional Coastal Plans prepared by regional councils and approved by the Minister of Conservation. Principles in the NZCPS are to ensure consist policy by agencies in achieving sustainable management and those relevant to ICZM are:

“The protection of the values of the coastal environment need not preclude appropriate use and development in appropriate places”,

“The ability to manage activities in the coastal environment sustainably is hindered by the lack of understanding about coastal processes and the effects of activities. Therefore, an approach which is precautionary but responsive to increased knowledge is required for coastal management”,

“A function of sustainable management of the coastal environment is to identify the parameters within which persons and communities are free to exercise choices”,

“The potential for adverse effects of activities to spread beyond regional boundaries maybe significant in the coastal marine area” (NZCPS, 1994: 2-3).

Regional Councils and Territorial Authorities

Three regional councils have regulatory functions and duties (RMA s.30) within the coastal environment of the Hauraki Gulf but only the ARC and EW are recognised under the HGMP Bill. They are required to produce regional policy statements (RPS) and regional coastal plans (RCP) outlining the resource issues and structure for management within the CMA and coastal environment (table 1), consistent with the NZCPS. Regional coastal plans are prepared by regional councils in conjunction with the MoC to achieve sustainable management in the coastal marine area. An RCP must review the effectiveness of the plan and it's policies and assess the extent that

controlling effects is not constrained by administrative and jurisdictional boundaries. A key weakness in the integrated management of the coastal zone is the definition of the CMA boundary that allows development controls to be considerably more strict on the seaward side than on the land-ward side (Bradley, 1996). In dealing with cross boundary issues the policies and rules implemented by other regional councils and territorial local authorities (TLA) must be consistent with regional and national policy statements. A RCP may be combined with another regional plan if necessary to achieve integrated management of related parts of the coastal environment (Rosier & Hastie, 1996).

Ten⁵ territorial authorities share boundaries within the coastal environment of the Hauraki Gulf (Map 2). Their functions and duties (RMA, s.31) are restricted at MHWS except for special cases in which a regional council delegates powers based on previous functions (e.g. RDC controls part of Hauraki Gulf). They are required to produce district plans (s.72-74) that must be consistent with National and Regional policy statements.

Regional coastal plans and district plans are intended to follow the policy direction of the RMA, NZCPS, and regional policy statements. They are also to provide specific guidance on implementation (Bradley, 1996).

Hauraki Gulf Forum

A Hauraki Gulf Forum (HGF) was set up in June 1997 “to facilitate communication, co-operation, co-ordination on issues that affect the integrated management of the Hauraki Gulf”. The influence of the HGF extends to the limits of the regional government and DOC conservancy’s areas (refer map 1). The Forum membership is composed of the political representatives of local government and representatives from the Department of Conservation, Ministry of Fisheries, and Ministry of Maori Development. The Forum has been proposed for statutory recognition under the HGMP Bill 1998. Relevant functions include production of a three yearly state of environment report, identifying information gaps, and liaising with business, conservation and Iwi groups. The HGF has

⁵ Whangarei District Council, Rodney District Council, North Shore City Council, Auckland City Council, Franklin District Council, Manukau City Council, Waitakere City Council, Thames-Corromandel District Council, Waikato District Council and Hauraki District Councils.

also been linked to other local government groups such as the Growth Forum (ARC unpublished newsletter).

Conservation Act 1987

The Act sets out duties and functions of the Minister of Conservation and DOC. It requires each regional conservancy to prepare a conservation management strategy (CMS) describing objectives for a ten-year period and recognising policy documents prepared under other legislation.

Minister of Conservation

The Minister of Conservation is the approving authority for regional coastal plans, coastal permits for restricted coastal activities and for monitoring the effect of policy instruments and consents made under plans (Williams, 1997). The Minister also approves conservancy CMS policy documents and conservation management plans developed by DOC. The Minister also has powers (Conservation Act, s.17Q Part IIIB) to grant concessions, licences, etc. for activities in conservation areas (Williams, 1997).

Department of Conservation

The Department of Conservation (DOC) was established under the Conservation Act 1987 for the purpose of advocating and promoting the conservation of New Zealand's natural and historic resources (Williams, 1997). DOC's role in the Hauraki Gulf is split between three regional conservancy's; Auckland, Northland and Waikato (map 1). The main responsibility for each Conservancy is to administer protected areas setting a direction for doing so under a Conservation Management Strategy (CMS) that outlines methods to attain "desired conservation outcomes" relating to conservation, recreation or tourism over the next decade. DOC has a responsibility to ensure consistency between the NZCPS and regional coastal plans. The Department has generally good interaction with regional councils to do this but there is a lack of effective ties with TLA's in achieving consistency (Bradley, 1996).

Conservation Boards

Conservation Boards are semi-autonomous advisory committees established under the Conservation Act 1987 liasing between the Department of Conservation, New Zealand

Conservation Authority, the general public and organisations like the NZ Fish and Game Council. Conservation Boards advise the NZCA and DOC on the implementation of conservation management strategies and conservation management plans, changes to areas of national or international importance, and advocates for conservation outcomes in public forums and through submissions to the planning process.

Fisheries Act 1996

The Fisheries Act purpose requires the “utilisation of fisheries resources while ensuring sustainability”. Legally “fish” is defined to include all species of fin fish and shell fish (s.2 FA 1996). The Act controls fisheries resources through the quota management system for major species and a range of regulatory controls for non-quota species. Jurisdiction for ‘fish’ extends from freshwaters out to the Exclusive Economic Zone (320 kilometres). The Act also provides for some tangata whenua values and interests setting criteria for mataitai reserves, legal support for voluntary rahui closures placed by tangata whenua (section 186A), and customary regulations that support kaitiakitanga.

Section 5 of the Act provides for the Treaty obligations of the Crown. Section 6 provides an interface between the FA and the RMA, including the legal right of access. Section 30(2) of the RMA and other sections dealing with the functions of regional councils and Minister of Conservation do not apply to the harvesting of aquatic organisms. Management Plans for protected species developed under conservation statutes⁶ are provided for under Section 15.

Ministry of Fisheries

The Ministry of Fisheries controls fishing activities and aspects of marine farming in the gulf. Ministry of Fisheries is responsible for the management of all marine and freshwater commercial, recreational and traditional fisheries in the Hauraki Gulf. Quotas are set, under the QMS, for commercial fishing and shellfish harvesting is regulated within the gulf. The Ministry is the approving agency for customary fishing mechanisms (e.g. taiapure , rahui and mahinga mataitai), initiated by tangata whenua to manage local fish stocks.

⁶ Wildlife Act, Marine Mammals Protection Act.

Hauraki Gulf Marine Park Bill 1998

A draft bill has been proposed by the minister of Conservation with the purpose of integrating the management of the gulf with its catchments and islands, creating a Hauraki Gulf Marine Park, and giving statutory recognition to the Hauraki Gulf Forum. Limited tangata whenua representation on the forum is included. Section 5 and section 6 of the Bill are to have the same effect as a national coastal policy statement.

Other Government Organisations in the Gulf

The Ministry of Transport (Shipping) contracted the Maritime Safety Authority to monitor shipping and marine pollution.

The Ministry for the Environment has a role of policy development. It is also responsible for monitoring implementation of the Resource Management Act (s24) by local authorities. It is currently developing an Environment Indicators program that includes strategies to monitor the coastal environment and coastal resources (MFE, 1998; Cooper & Nicholls, 1999). The Ministry produces discussion documents to promote 'good practice' with the aim of clarifying statutory powers and processes.

Other Legislation

Appendix 7 refers to other statutes affecting ICZM in the Hauraki Gulf.

Treaty of Waitangi

The Treaty is given statutory recognition under the RMA, Conservation and Fisheries Acts and the Hauraki Gulf Marine Park Bill. Agencies with legislative authority to manage resources are required to recognise the principles (Government / Kawanatanga, Self Management / Rangatiratanga, Equality, Reasonable Co-operation, and Redress, Given, 1995) of the Treaty of Waitangi. The Department of Conservation and Regional Councils state a commitment to the principles of the Treaty in their policy documents. Hauraki Iwi believe the Treaty supports their status as a decision-making partner unlike stakeholder groups in the Hauraki Gulf coastal environment. Mechanisms to effect these principles are yet to be developed with tangata whenua in the Hauraki Gulf (R. Cooper pers com, 1999).

Many groups of Iwi and Hapu claim tangata whenua status within the Hauraki Gulf area (map 1). The Hauraki Maori Trust Board has been established to represent the interests of Ngati Paoa, Ngati Whanaunga, Ngati Maru, Ngati Tamatera, Ngati Hako, Ngati Hei, Patukirikiri, Ngai Tai, Ngati Tara Tokanui, Ngati Rahiri Tumutumu, Ngati Porou ki Harataunga ki Mataora and Ngati Pukenga ki Waiiau. The Hauraki Maori Trust Board believe that Maori title to the foreshore and seabed in the Hauraki region has not been relinquished by Hauraki iwi and continues to be held by them in accordance with tikanga Maori. The group has put forward a claim of ownership for coastal resources in the Hauraki Gulf (WAI 100 and WAI 110)⁷. Administrators have previously (mid 1860's) acknowledged customary use for large areas of the foreshore (e.g Manaia, Coromandel, Colville, Whitianga and Katikati).

Issues affecting the coastal environment of concern to Hauraki Iwi relate to the effects of over fishing and environmental degradation on the present day customary fishery. Key issues addressed in Regional Coastal Plans include⁸ resolution of foreshore and seabed ownership, recognition of the significance of Tikapa Moana and the kaitiaki obligations of Hauraki tribes, protection of the customary fisheries resource from the effects of marine farming, and holistic integrated management of ecosystems (Cooper pers com, 1998). The HMTB are aware from monitoring of customary harvest levels (permits under Regulation 27, Fisheries Act 1996) that much of this harvest taken between Thames and Coromandel may be impacted by marine farming within a proposed marine farming area at Wilsons Bay. Hauraki iwi believe customary rules and approaches developed by Hauraki iwi/hapu during the 19th and 20th century's for governing the gathering of shellfish have not been recognised in the fisheries management framework (Cooper & Nicholls, 1999).

International Treaties

New Zealand is a signatory to various international obligations influencing the resource management framework of the Hauraki Gulf/ Firth of Thames region. These include the Convention on Wetlands of International Importance Especially as Waterfowl Habitat,

⁷ Hauraki Maori Trust Board 1997. *The Claims*. The Hauraki Treaty Claims Vol.1.

⁸ Submissions by the HMTB to Environment Waikato

1971 (RAMSAR Convention), United Nations Convention on Biological Diversity 1992, and United Nations Framework Convention on Climate Change 1992.

Other Groups

Other organisations have a limited non-statutory role in the management of natural and physical resources in the greater Hauraki Gulf area. These include conservation boards, commercial stakeholder and non-governmental organisations.

CONCLUSION

A case study examining legislative and administrative systems for ICZM in the Hauraki Gulf provides a context for an evaluation of the existing integrated management framework. In concluding the discussion the following limitations and problems are noted that affect ICZM in relation to present day attempts to integrate the roles and functions of involved organisations. There is a lack of consistency and leadership in the hierarchy of the coastal management structures indicated by inadequate collective agreement between the NZCPS and RCP's. It can also be shown that there is a poor relationship between key players such as DOC and territorial local authorities. Groups such as the HGF have been established and legislation proposed to ensure consistency between organisations.

Groups outside of the process (e.g. Iwi, Conservation Boards, etc.) do not support this kind of management structure. There is no recognition of the statutory rights and obligations of tangata whenua.

Although local government is considered an agent of the Crown their mandate does not allow resolution of many of the pertinent issues. There is indecision about the influence of the Treaty on future policy directions and implementation.

Integrated management of the coastal and marine environment of the Hauraki Gulf is possible through co-ordination of statutory and non-statutory interests. A basis for policy integration can be seen in statutes (Fisheries Act 1996 references powers under the RMA and Conservation Act 1987) and in policy documents (ARC regional coastal plan policy on fisheries resources). Consistency is also required between national legislation and international agreements. These issues are discussed further in Chapter Five interviews with stakeholders associated with the Hauraki Gulf.

CHAPTER FIVE: RESULTS FROM INTERVIEWS

INTRODUCTION

Twenty people have been interviewed (refer Appendix 4) in the first round of the research investigation. These included analysts and managers from central and regional government, and officers and political representatives from local government as well as representatives of private organisations and voluntary groups. The objective of the interviews is to assess the issues and concerns of stakeholders with regard to the coastal management of the Hauraki Gulf. The interviews are grouped under headings and questions derived from an ICZM literature review in Chapter Two.

Interview material is divided according to the 12 headings used as a basis for questions. Responses are discussed in a sequence from central government to local stakeholder and where possible grouped according to common themes or organisational level. The material is summarised and is only an indication of the interviews with acronyms used listed in Appendix 2. The written transcripts must be consulted for a full and accurate description. Order of results also facilitates comparison with theory and facts from Chapter Two and Three.

1 UNDERSTANDING OF ICZM

The range of answers indicates the space and time characteristics, institutional behaviour, roles for stakeholders, methods and limitations of present definitions of ICZM used in New Zealand.

The **Ministry for Environment** does not separate the coast from the land, coast and marine when considering land-use patterns, bio-diversity, aquaculture and transport, impacts of activities and the mechanisms to deal with effects. Integrated coastal management should follow RMA processes using the coastal policy statement as a reference point to prioritise issues in the regional coastal plans. Other strategies such as the sustainable land management strategy, the bio-diversity strategy would deal with indirect effects of land activities. The management approach required involves co-ordinating a range of policy tools across agency boundaries. Management tools should also incorporate human and cultural values, particularly the Treaty of Waitangi, and a long-term focus. There is a lack of scientific information for the marine area. There is

no lead agency despite the Department of Conservation having a sense of responsibility and regional councils acting as practitioners.

The **Ministry of Fisheries** believes integrated coastal management is a process whereby society defines its requirements for coastal management. It requires setting long-term goals and involving all organisations with responsibilities or operations in “wider aquatic environment”. Integrated management requires development of an appropriate policy framework for determining how much fish is harvested, the type of research and how it is done, and what compliance is required to meet mandated goals. Institutional arrangements are of second order importance. Ministry of Fisheries believes current legislation and administering agencies concerned with integrated coastal management in New Zealand are not well integrated because laws and statutory processes have different time frames and objectives. Without integration, coastal management is reduced to “effective communication” between agencies and stakeholders.

The **Department of Conservation** is concerned that integrated coastal management reflects consistency with an ecologically based philosophy. It combines management at a catchment level and integration with neighbouring landholders through input into district plans and regional policy statements. It is about communities (wide interpretation) having input into a particular plan or project as actions on the land affect everything in the coastal marine area and vice versa. Legislation should require that one particular agency have the administrative oversight to prevent the situation of each agency looking after their own patch.

The **Auckland Regional Council** and the **Ports of Auckland** emphasise a view of integrated coastal management that recognises all vested interests, the diversity of values and influences on those values. **Environment Waikato** emphasises that effective management only occurs with an integrated structure and process.

Auckland region **territorial authorities** operate a structure that has a land-based focus for controlling development. They believe Integrated Coastal Management is about co-operative action between territorial, regional authorities, central government and Iwi. This allows people choices within environmental controls and the ability solve issues

together¹ for satisfactory outcomes such as a clean ecosystem and coastline (ACC, NSCC, TCDC, WCC, RDC pers com, 1998). The dynamic nature of the coastal zone as a system exists within the context of the community who exhibit a high awareness of coastal issues (MCC, TCDC pers com, 1998). The continuum of environmental and physical boundaries requires recognition in jurisdictional boundaries. Integrated coastal management is a catalyst for encouraging communities to take responsibility for their adverse effects by developing community action plans. Developing comprehensive non-statutory plans² for ICM should not go beyond the powers of the RMA under sections 30 and s.64 (RDC pers com, 1998).

Hauraki District Council and Forest & Bird believe the broader context of integrated management will benefit coastal management by adding value, saving money and standardising rules and objectives. Hauraki District Council adds that integration involves an approach that changes people's behaviour and understanding and provides mechanisms in planning documents to give effect to co-ordinated management. Separating the coastal environment from the wider environment is a valueless dichotomy.

The **Auckland Conservation Board** perceives integrated coastal management as more efficiently reaching outcomes by integrating structures. The main issue for stakeholders is deciding whether it is an integrated mechanism, or standing on principle, that benefits the short and medium term. Pragmatic integrated outcomes must use mechanisms to include other interests such as private sector landholders and developers.

Both the **Fisheries Consultant** and the **Leigh Fishers Association** express doubt that integrated coastal management can be implemented. Co-operation between resource management and fisheries management processes is possible through non-statutory means in the gulf and limited to key agencies and Crown Ministers. They are concerned about gaps in knowledge and the lack of openness caused by adding another statutory layer of management. The process of integrating management across the land and sea would not benefit small commercial fishers and possibly worsen access for the commercial fishing sector. **Auckland Region Recreational Fishers** regard integrated

¹ e.g Kare Kare shellfish ban within Waitakere City

² Coastal management strategy divides into comprehensive coastal management plans for different coastal environment sections

coastal management as including the sea environment, foreshore, and land mass involvement. ARF believes fisheries management is increasingly devolved but the Hauraki Gulf Forum approach results in feelings of déjà vu and cynicism in its similarity to the former Hauraki Gulf Maritime Park.

2 APPROACH TO PLANNING AND GOALS

Respondents interpreted this question as referring to promoting community participation balanced with the input of multidisciplinary perspectives to achieve policy buy in against constraints of conflicting objectives and a lack of political reality.

The **Ministry for Environment** recognises that the key issue for integrated management is to have compatible objectives. Specific interests must be shaved down to a bottom line the RMA provides in terms of assessing effects. Submissions and meeting with councils that are developing plans are made to support the Ministry's objective of incorporating different perspectives to achieve policy 'buy in' by people. Goals for Environment 2010 are similar to the coastal policy statement but weaker in that they do not include separate Treaty, marine or urban components.

The **Ministry of Fisheries** considers consultation processes enable people to move from mechanics of involvement to understanding bigger issues including wider values such as formulating objectives, strategies and rules. Integrated approaches are very resource intensive to achieve participation with councils in developing coastal plans, setting total allowable catch and catch rules. Achieving planning goals requires a process of developing a policy plan, research, and involvement that reflects at least 80% community support or else it's a waste of time. A process model for the Ministry of Fisheries to achieve Fisheries 2010 goals would involve integration of management processes, that included fisheries management and the wider ecosystem.

Department of Conservation policy is developed from the bottom up but follows national guidelines. The Department's approach requires that flora and fauna values are not compromised in the coastal environment. This is limited by the Minister of Conservation requesting that involvement in resource consent applications focuses on those with significance to conservation values: a rifle bullet rather than shot gun approach to resource management. Information is provided for individual local authorities but it is at their discretion as to how it is incorporated. Management is not

integrated when local authorities need to be reminded of their mandate to clarify the issue of individual organisational roles. Planning for marine reserves lacks integration where customary approaches like *taiapure* are not officially recognised by local authorities in regional or district plans. The RAMSAR (refer Appendix 2) site³ is a working example of integration between Department of Conservation, district, and regional councils based on an international agreement.

The **Maritime Safety Authority** is a crown agency contracted to the Ministry of Transport under the Marine Pollution Act. Management of the impacts of oil spills and prosecution in co-ordination with the regional councils is a key ICZM role.

Both **Auckland Regional Council** and **Environment Waikato** encourage iwi and community input in producing a coastal plan. Public meetings collect ideas on values in regard to significant issues councils can actually manage with follow up meetings to introduce the draft plan. Discussions with Department of Conservation and council politicians also accompanied the drafting process. Political input creates the extra public interface to involve more people than only those who understand the documents and their capacity to influence them. Education promotes community understanding about the coastal plan framework but is under utilised (e.g. the ARC “Estuaries Kit” outlines the effects of urbanisation). EW regards the Forum as aiming for joint goals and objectives that direct its own roles and functions. EW also advocates a less regulatory approach.

Hauraki Gulf **local authorities** regard the regional policy documents⁴ as key instruments and perceive the regional coastal plan as at least attempting integration and tying into Annual and Ten Year Financial Plans (MCC, RDC, TCDC pers com 1998). Consistency requires adjusting decision-making between territorial authorities, regional councils and DOC, and between plans and private landowner aspirations for coastal resources (MCC, TCDC pers com 1998). The planning process is framed by extensive iwi, community and public consultations, combined with Forums (e.g. Vision Hauraki) to achieve a multidisciplinary approach to incorporate differing and competing views (ACC, MCC, WCC pers com 1998). Involving officers and the community together breaks down barriers (WCC pers com 1998). It enables community initiatives (e.g.

³ Miranda, Firth of Thames.

Whiritoa Beach Care) to establish formal planning documents with funding controlled by local government (HDC pers com 1998). District Plans operate to MHWS and their implementation within the context of higher level plans offers flexibility, but are inhibited in terms of actual controls over activities in the coastal marine area. Council control is restricted to litter and dog bylaws although delegated powers for the coastal marine area can be conferred by regional councils (MCC, RDC pers com 1998). Communities and property owners are concerned about regional policies and rules (e.g. regional council forced landowners to legitimise reclamation) creating pressure to remove the ability to integrate broader issues in proposed plans that direct officers to go beyond administrative boundaries (NCC pers com 1998).

The **Auckland Conservation Board** is influenced by its regard for plans developed under sustainable management not conservation legislation. The Board is also concerned with the review process needed to convert lessons from new instruments and legislation into durable management. One opportunity is at the ten-yearly review of the regional coastal plan, under the RMA. Local authorities of the region argue that as democratic organisations they represent the public interest and this is their main reason for not encouraging representation of non-statutory agencies on the Hauraki Gulf Forum.

Forest & Bird believes it is listened to because it has no “NIMBYS” axe to grind but also perceives environmental politics of the regional council shifting to the right wing. It is unsure whether integrated management would improve interactions between environment and other groups. In seeking to protect an area of the Manukau harbour, neither F&B nor the Ministry of Fisheries can achieve protection because Iwi won’t agree on the appropriate mechanism. **Ports of Auckland** agree that planning approaches are influenced politics, generating ideas that are not grounded in economic sense. A pragmatic approach would see some stepped improvement rather than a one-day total fix.

The **Leigh Fishers Association** believes the sustainable utilisation of fish resources is influenced by conflicting objectives. Fisheries management in the gulf attempts to be separate from land/coast management by issuing private property rights, and using

⁴ Conservation Management Strategy, Regional Policy Statement, and Regional Coastal Plan

incentives and punishments as a regulatory tool. The independent **Fisheries Consultant** regards fisheries management processes as clear and relatively non-statutory unlike regional coastal plans that need to communicate better with people about what is being done. **Auckland Region Recreational Fishers** are developing a new fishing policy in recognition that fisheries management for Snapper is needed as the Hauraki Gulf is a major breeding ground.

3 THEORETICAL CONCEPTS *“Phrases become buzzwords” [HDC]*

Responses generally demonstrated an understanding of concepts useful for ICZM and awareness that these could be included within management planning and practice.

The **Ministry for Environment** believes ecosystem management describes habitat interdependency. Adaptive management provides for continual improvement in setting objectives, implementation, monitoring and review to encourage a raising of awareness about knowledge gaps. The Ministry perceives that Kaitiaki (stewardship and community involvement for the coastal environment) is implemented through ‘Beach-care’ schemes. Monitoring should benefit from the information to be had from people on the beach (e.g. recreational fishers) as well as the national Environmental Performance Indicators programme. The RMA provides a sense of “environmental bottom line” for implementing loose concepts like sustainability. In contrast, the **Ministry of Fisheries** believes that managing individual fish stocks under a Quota Management System (QMS), while not on an ecosystem basis, is a first step towards that approach. If the precautionary principle was applied in a rigorous manner it might not allow any commercial fishing in New Zealand. An adaptive management program has been implemented to measure the information available to make decisions.

The **Department of Conservation** doesn’t believe anyone knows (absolutely) what an ecosystem is and thinks catchment management is easier to define. What is meant by an ecosystem would have to be defined with a line and a reasoned explanation for the limits. When considering the Firth of Thames as an ecosystems catchments contribute to it and the open oceans outside of it are also part of that ecosystem. For Department of Conservation integrated management includes the water portion, the land and the tidal zone. Conservation land at Mt Moehau should ideally be extended to include a representative area of coastline. Ecosystem management brought about subtle changes in thinking, for example operationalising pest and individual species management to fit

with surrounding landowners. Concepts applied though integrated management would allow development at a pace that prevents the loss of distinctive New Zealand features. Concepts (e.g. sustainable management, sustainable development) are undefined as to their meaning and differ between people. Cultural perspectives determine the meaning of ecosystem management and the tools that are used; customary or conventional.

The **Auckland Regional Council** recognises that ecosystem management encompasses a non-anthropogenic perspective. Adaptive management implies flexibility using a range of management tools in the coastal marine area. All involve a more holistic type of management. These concepts have been translated in development of a catchment management approach for flooding and storm water quality and can be seen in a number of small examples. The council encourages use of comprehensive plans for particular stretches of the coast to broadly cover issues of discharge, public access, erosion and enhancement of landscape values.

Environment Waikato interprets ecosystem management as a foundation. A “bottom up” process is being applied through the Whaingaroa harbour community to establish desired environmental conditions. Adaptive management can be the tangible expression of empowering communities. The precautionary principle is applied to the coastal marine area but not explicitly on land where 70% of coastal management is done and is an inconsistency in the planning framework.

Territorial authorities recognise the concepts of ecosystem management and adaptive management. They also recognise the holistic view of kaitiaki and other principles e.g. carrying capacity. Examples of their application vary but all concepts applicable to integrated management require feedback (MCC pers com 1998). Theoretical concepts open a door for a different way of understanding in contrast to a prevailing mindset of “a right to survive whether people suffer or not” (TCDC pers com, 1998). The application and translation of concepts should be in a derivative sense to encourage a common understanding and support for natural values from stakeholders (**Auckland Conservation Board**, TCDC, HDC pers com, 1998). The issue of ecology in a natural, stable state is linked with the effects of urbanisation in assessing the role of Pohutakawa’s in stabilising cliffs (NSCC pers com, 1998). A green network process is being used to manage the coastal environment in an integrated way, based on stream catchments from the ranges to the marine environment (WCC pers com, 1998). Kaitiaki

issues require a partnership and development approach with tangata whenua such as a kaitiaki management plan in conjunction with Ngati Paoa to outline development limits (MCC, ACC pers com, 1998). Ecosystem and adaptive management do not operate in isolation from operational concepts like financial planning (MCC pers com, 1998). Ecosystem management, adaptive management and holistic management by kaitiaki are concepts for adoption in a precautionary sense through the district plan and the comprehensive management plans (RDC pers com, 1998). Uncertainty can be acknowledged by a process of feed back to policy giving advice in relation to the consent process while adaptive management refers to incremental change (MCC, TCDC pers com, 1998).

Forest & Bird consider that ecosystem management be applied to urban areas through the mechanism of catchment studies from river headwaters down to the coast. Adaptive management is referenced as adaptation to what's there. Application of theoretical concepts will improve resource management by empowering people to have the ability and the education to understand conservation issues.

Ports of Auckland is concerned with the space around the wharves within which an exclusive right exists to use that space for berthing and unberthing ships. POA do not believe the application of concepts outside of its statutory responsibility (RMA section 348A) is relevant.

The **Leigh Fishers Association** believes ecosystem management requires definition of what the ecosystem is. The **Fisheries Consultant** believes it is managing the ecosystem within the context of wider issues. Both perceive adaptive management as the most robust approach to managing fisheries because it doesn't rely on sophisticated assumptions. It is increasing the total allowable catch in the short term and monitoring them with some causal information. Developing a base measurement for the wider Hauraki Gulf area should not introduce further complexity through assumptions that satisfy the interpretations of fishermen and modellers. Community involvement is not at a satisfactory level in Auckland because representation is discouraged by a lack of any feeling of community. Needs a constant education process to get users to understand sometimes conflicting pressures of maximising dollars versus maximising environmental outcomes.

4 RESPONSE TO CHANGE

Replies to this topic indicated an inability to anticipate change particularly where organisations are not proactively collaborating with groups directly influenced by change.

The **Ministry for Environment** in assessing responses has picked up differences between hard and soft science while other work has been covering the issue of risk perception by the public. This has allowed adaptive management to be applied using the continual improvement model. Multi disciplinary teams are more open to change but vary from group to group within the Ministry.

The **Ministry of Fisheries** has a rudimentary research and information collection program through the “catch-net”⁵. It signals broad biological trends but is inadequate for social and economic issues that impact on fisheries. Information priorities focus on minimising impacts and understanding the trade offs made at a broad level. The aim is a policy framework that addresses those issues and gets the incentives right so that people will work constructively together for sound environmental outcomes.

The **Department of Conservation** responds effectively to environmental change despite the impact of political change on their budget. The Department is out of touch with what the local community think, who also lack the awareness that conservation is an essential service. Responding to requests for marine protected areas puts the Department of Conservation in a difficult position as iwi and local people perceive marine farming and reserves as barriers preventing them from exercising their individual rights. The impetus for sites must come from communities because of political connotations involved with selection. Management priorities for intervention in the coastal environment are influenced by the level of value on the positive impact of an individual project.

The **Auckland Regional Council** believes groups and organisations fostered through coast care and land care are an opportunity to hear community views about changing needs. The incremental changes of urbanisation will more greatly affect an estuary than an open coastal area and research into the cumulative effects on a particular area is

required. Knowledge can then be applied to similar examples. **Environment Waikato** also acts as a driver of community perception based on its overall information advantage that may diminish as the community picks up the wider sustainability arguments.

Territorial authorities have different views about organisational response to change. Change is reviewed via projections of demographics and statistics (e.g. tourist information, new subdivisions, building consents) to understand development effects on requirements for reserves, community facilities, sports fields, and environmental areas (HDC, TCDC, RDC pers com 1998). Approaches varied from forward-looking (development projections to the year 2016) to a response of, “We react to things right in our faces... forward thinking is put off to when we are not frantic” (RDC, TCDC pers com, 1998). Change results from politics and information collected from state of the environment monitoring. Communities often form groups concerned about coastal issues that Councils assist by monitoring issues of concern to ratepayers. Issues may fall outside of an authorities jurisdictional interest with the desired outcome also outside of Councils control because it is not the decision-maker (MCC, HDC pers com, 1998). Issues brought to the Vision Hauraki Forum (e.g. tourism since the fast ferries) are incorporated into the long-term strategy in conjunction with monitoring of District Plan robustness (ACC pers com, 1998). The Hauraki Gulf Forum has not acknowledged community and Iwi influences. Monitoring changes and trends is particularly important in regard to coastal hazards. Responding to change is better achieved through partnerships to achieve effective community participation, for example, the Pacific Island advisory board, and Te Tamata Runanga standing committee formed under a green print local Agenda 21 (MCC, WCC pers com, 1998). Council responses maybe effective in a wider context but some issues may only be resolved individually (HDC pers com, 1998). Issues (subdivision size appropriate for sewage disposal or landscape character on Waiheke Island, and changing residential uses that increase built space with less natural space) are not always anticipated in District Plans. This can exacerbate problems associated with erosion and storm water. (ACC, NSCC pers com, 1998). Response is enhanced by the preparation of a ten-year financial strategy but

⁵ Exact meaning unknown.

maintenance of the natural environment can remain a low priority compared to roads and sewage systems (TCDC pers com, 1998).

Ports of Auckland describe response to change in two ways. Proposed legislative change are monitored (e.g. the RMA). Secondly, the management style of POA encourages working with parties rather than an adversarial stance. For example, the increasing urbanisation of nearby Parnell has lead POA and local residents to form liaison groups that work together to identify noise issues and their mitigation.

The **Leigh Fishers Association** comments that a large structure won't be aware of changing influences. Roles should be devolved right back to the community. The association would prefer very local and less regionally imposed structures. Local communities should manage their resources not just by supplying the information but be actually empowered to do the business themselves. The **Fisheries Consultant** believes the regulatory authorities are apathetic towards identification and control of problems. Marine farmers can also feel powerless. **Auckland Region Recreational Fishers** response to change is to formulate policies for the whole of the gulf.

5 ACHIEVEMENT PROCESSES

The commentary for this section outlined a preference for voluntary and non-regulatory approaches with experimentation to meet preferred outcomes.

The **Ministry for Environment** comments that processes in New Zealand are driven by an ideology of least cost regulation and people owning the project. Voluntary and market mechanisms are preferred to a regulatory approach, which requires knowing how to influence the links between person and outcome. Education and voluntary market regulation are politically acceptable and can be effective. Untested processes such as risk perception, cognitive mapping or co-operative management with iwi are new for New Zealand and difficult to implement because crown agencies are required to sign off and/or transfer authority.

The **Ministry of Fisheries** has undergone a learning process in the provision of a sustainable use framework in the Fisheries Act allowing stakeholder participation. The quota management system was not a tool oriented towards enhancing employment or small communities. Sector group arrangements are emerging as a tool for managing fisheries, derived from a rights based framework that allows participating groups to run

a sustainable management process. Harvesting rights will drive management responsibilities and influence the standards in terms of environmental outcomes. The government is less intervention minded but would provide a framework for planning to ensure integration is focussed on resource sustainability.

Department of Conservation wants achievement linked to integration of the New Zealand Coastal Policy Statement into regional coastal plans. Regional coastal plans were a big step towards integrated coastal management. Drawing a line in the water and adopting a case by case approach is incompatible with effects based planning for a regional coastal plan and provides little certainty for marine farmers. Beach Care approaches achieve facilitation and mediation before issues became a problem. These are successful when combining one person with a clear objective as a negotiator for a small community whose members support the buy in required. Trade off and compromise will not always deliver favourable outcomes.

Both the **Auckland Regional Council** and **Environment Waikato** believe education is a great tool, but uncertainty as to the ability of this method to achieve environmental outcomes influences the financial commitment for education in proportion to other methods (e.g. engineering solutions). Attacking issues or problems “at the top of the pipe” (i.e. litter) also requires local government to support community change. Non regulatory methods (e.g. Beach Care models) may create requests for more enforcement, requiring increased monitoring to assess the intergenerational benefit of environmental education.

Territorial authorities in the Auckland region all share similar views in perceiving achievement processes. They focus on outcomes and good environmental results through participation of individual communities in consultation processes. Achievement may follow an unstructured process, whether implementing projects or resolving issues, and success depends on the definition of failure (HDC pers com, 1998). There is a preference for adaptive innovative methods for which the achievement of environmental well being as a public perception can be demonstrated (ACC, WCC pers com, 1998). Research should justify achievement methods but there is a political barrier to implementation prior to public consultation on study results (MCC, NSCC pers com, 1998). Achievement in the District Plan framework is complemented with additional

non-regulatory mechanisms (e.g. heritage funding) useful for coastal margins with significant values (ACC, MCC pers com, 1998).

Achievement occurs when issue resolution involves dialogue and co-operation either at multi-party or individual levels (POA, RDC pers com 1998). An integrated approach creating savings (“Spending less on lawyers”) but with increased in-house executive time requires considered management (POA pers com, 1998).

Achievement is by adapting to stakeholder interests and leaving the process open to public submission. Employing consultants and encouraging political connections goes beyond internal expertise to enhance achievement (ACB, TCDC pers com, 1998).

Advocacy enhances institutional durability to counteract ‘squeaky-wheel’ public policy management. Outsider advocacy can maintain an important perspective next to the political process of a larger framework (LFA pers com 1998).

6 NETWORKS AND STRUCTURES

Answers to this topic showed understanding about the benefits of forming networks and recognised constraints on their effectiveness.

The **Ministry for Environment** believes that the co-ordination of networks for integrated management requires leadership and clarification of roles and responsibilities. Lack of co-ordination creates disincentives for network administration and funding of maintenance. The Ministry has internal co-ordination structures⁶ to include people from both head and regional offices. The Ministry has close linkages with Ministry of Fisheries, Department of Conservation, maritime safety authority and Land Information New Zealand but may not share the same perspective. The Hauraki Gulf Forum, with its links to the Regional Growth Forum is an example of a network driven at a regional level. The **Auckland Regional Council** also believes that the Hauraki Gulf Forum concept increases co-operation and co-ordination between interests in the gulf. Entry to the forum is restricted to bodies with statutory responsibility for pragmatic purposes in managing meetings.

⁶ E.g. A marine caucus of staff from the resource management, hazardous waste, strategic policy and environmental policy groups.

The **Ministry of Fisheries** has developed a memorandum of understanding with the Department of Conservation and with the New Zealand Police to improve compliance with regulations.

The **Department of Conservation** believes its role in a network is as an information provider for local government. The Department perceives that integration fails when demarcation issues occur. That is where one council, either district or regional, cannot decide who's going to take responsibility for an issue because no one has talked to each other. Informal consultation should also be encouraged.

Environment Waikato believes previous top down proposals foundered on the issues of co-ordination. An extra tier of regional/national bureaucracy was not seen as necessary to effectively manage the resources of the gulf. The HGF was intended to align management responsibilities, which requires the involvement of DOC and the Ministry of Fisheries. EW suggests that a state of environment report will create opportunities for more effective community and volunteer information collection.

Territorial Authorities believe political networks should be linked to community boards, non-governmental organisations, and tangata whenua (MCC, WCC pers com, 1998). A forum of officers group meetings is useful to network issues (NSCC pers com, 1998). Networks can also extend relationships to business and industry with environment friendly examples⁷ serving as a model to spread the ownership and acknowledgement of these issues. However the present strong focus on statutory processes deters councils from going beyond regulations and rules (MCC, NSCC, WCC pers com, 1998).

District Councils recognise two levels of networks. There are formal structures (e.g. Hauraki Gulf Forum, regional growth strategy, Vision Hauraki, Local Government Association) that offer potentially good information exchange but lack effective communication mechanisms (e.g. currently no dialogue across councils about methods) (TCDC pers com, 1998). Local authority involvement at this level relates to adverse effects on ratepayer's income (HDC pers com 1998). Another level is the District Plan and submission processes where coastal issues are aired by key interest groups (e.g. Iwi,

⁷ West City eco-mall

Forest & Bird, ratepayers groups) (RDC pers com, 1998). This also complements a loose network of community organisations and council staff involved in the groups.

The **Auckland Conservation Board** encourages links with groups who are not part of the Forum. The Board operates within a different network to the Forum group because they have different purposes and the Forums focus of integrated management is on structures, and not necessarily outcomes. **Forest & Bird** are in regular meetings with Department of Conservation, which also include Ministry of Fisheries analysts. Forest & Bird Local branches are also in contact with district and city councils and participate in a non-governmental organisation group liaising with Ministry for Environment.

The **Ports of Auckland** has internal and external networks. An internal steering committee reports on the responsibilities of managers heading a particular business area. The POA chief executive officer meets with the CEO of the regional and city councils once every three months. Teams are also set up to liase externally with third parties when required.

The **Leigh Fishers Association** maintains a close network throughout the Ministry of Fisheries, and to a lesser extent with the Department of Conservation. Other regulatory agencies (e.g. Auckland Regional Council) are regarded as not generally helpful. The **Fisheries Consultant** believes fishing companies are concerned only with legal requirements and not structures. The **Auckland Region Recreational Fishers** comments on the advantage of personal contacts and has regular involvement with DOC, ARC and other organisations.

7 PROMOTION OF ICZM PRACTICES

Responses discussed a variety of practices aimed at improving understanding and co-ordination amongst agencies, Iwi and stakeholders by communicative and trust building processes.

The **Ministry for Environment** comments that promoting the use or correct implementation of integrated environmental management is achieved through the RMA. A method of improving practice may involve an interdepartmental working party of all central agencies. Integrated management practice fails if key groups are separated from others working on coastal issues. The Ministry has regular liaison with agencies and

other groups⁸ but is unclear as to the general state of knowledge about integrated management.

The **Ministry of Fisheries** suggests integration is based on sharing information. People must understand it's in their interest to participate. Any framework to unblock information for stakeholder participation in decision-making must consider the cost effectiveness of participation processes as New Zealand is not wealthy. Government agencies often arrogantly dismiss iwi and stakeholders (e.g. non-governmental organisations) with sham consultation processes but are now starting to listen. Another issue results from the loose focus of the old super ministry's (e.g. MAF) with multiple competing and conflicting objectives. A smaller organisation is more focussed but must monitor its direction in regard to an ecosystem based approach. Fisheries management processes are not integrated with the responsibilities of other agencies, indicating that the RMA maybe an inappropriate instrument for managing aquatic ecosystems.

The **Department of Conservation** believes that promoting integrated management is about finding ways of getting communities to buy in. Processes require trust and credibility, achieved when people listen and are able to reply and to affirm that they have been listened to. This occurs with two types of decision-making. There is the democratic form (e.g. Whiritoa beach care) where the whole group makes the decision, not only the agency. Or else the decision-making is by people sitting down to inform each other with good dialogue. They negotiate with the hard line people who disagree and leave. The Department of Conservation would then make the decision rather than the group. Interfaces between organisations and the community are hindered by a lack of relationship skills and the necessary organisational commitment to fund them.

The **Maritime Safety Authority** role is as a contractor and not a facilitator of integrated management in the Hauraki Gulf (e.g. providing navigation lights). However the MSA promotes better environmental protection by providing education and communicating to the skippers of boats to change shipping behaviour. Coastal management knowledge is directed from the MOT to DOC and regional councils via the RMA.

⁸ Councils, industry groups, non-governmental organisations, iwi groups, science funders and providers, and professional bodies.

The **Auckland Regional Council** believes practice involves exchange of ideas, learning and listening by professional groups, regulatory organisations, territorial local authority liaison and interagency groups, education forums, the Growth Forum, industry specific groups, land developers, and environmental interests orientated toward issues of common concern. Hauraki Iwi and Ngati Whatua did not perceive management of the Kaipara harbour as being integrated. The regional council endeavoured to provide the technical information working with the community to improve how the Kaipara harbour is managed. Practices such as Beach and Coast Care are relationship building exercises.

Environment Waikato believes promoting integrated management practice requires providing education (e.g. information on zero wastes and cleaner production philosophy) through community extension workers or resources kits (e.g. "Rivers and Us"). Environmental education facilitators are linked to different care groups (e.g. Whaingaroa environment group) and project co-ordination may incorporate other organisational knowledge (e.g. customary fisheries regulations), not part of the regional council's role and functions. Sharing information promotes interagency integration but is often constrained by different operating procedures and policies.

Territorial authorities believe grass roots initiatives encourage people to contribute, to be part of change, which is crucial for successful management and plan development (ACC, WCC, RDC pers com, 1998). Initiatives are based on various management strategies⁹ (ACC, RDC pers com, 1998). Staff duty may sometimes go beyond statutory responsibilities but is limited to the statutory minimum for unsuccessful activities (ACC, NSCC, TCDC pers com, 1998). Good officer relations can be promoted by a cross-corporate team approach that networks members from various groups such as assisting the monitoring team to provide education material (MCC pers com, 1998). Other methods promoting integrated management practice rely on education in a broader context of pragmatic reasoning as crucial for successful management. A lack of education creates resistance to acknowledgement of all interests in coastal management (HDC, NSC pers com, 1998). Larger organisations like the HGF are catalysts for establishing protocol agreements to facilitate integrated practice and are reinforced by surveys combined with the Annual and strategic plans that give the communities

⁹ E.g. ACC involved with residents and ratepayers on Great Barrier Island to change wharf structures to improve safety.

perception of environmental performance (NSCC pers com, 1998). Barriers are created when jargon is not translated across the council or where management structures cut across team structures in relation to Annual Plan and Long-Term financial planning (MCC pers com, 1998).

Auckland Conservation Board believes that integrated coastal management practice should include integrated participatory management.

The **Leigh Fishers Association** believes protecting marine areas necessitates a co-ordinated, focussed political process.

8 PERFORMANCE AND FEEDBACK MECHANISMS

Participants discussed evaluation in the context of types of feedback, accountability, appropriate standards, time and financial constraints to their effectiveness.

The **Ministry for Environment** believes evaluation is very poorly done due to issues of clarity and policy buy-in. Evaluation mechanisms require a mix of biophysical, social, economic and cultural indicators. The RMA s.2, the NZCPS, and RCP's should back these. Evaluation would be linked with goals depending on scale of the issue or integration.

The **Ministry of Fisheries** believes indicators could be associated with information from the area of environmental accounting. This would create room for an environmental responsibility Act as a mechanism for evaluating fiscal versus environmental risk for transparent decision-making. Evaluation would utilise a matrix approach that could consistently assess fiscal and environmental trade offs.

The **Department of Conservation** is concerned to assess how concepts from the New Zealand coastal policy statement are being implemented and monitored within a regional coastal plan. This requires co-ordinated monitoring and evaluation of any process put in place. There is no appropriate process at field level to measure the rate of effectiveness of organisational change.

The Ministry of Transport monitors the **Maritime Safety Authority** through a performance contract. Performance indicators may not apply to integrated coastal management. The ISO14000 standard is about doing the job well but not whether it is right for the market. Total Quality Management (used by the Department of

Conservation) can produce a poorly conceived measure. The Maritime Safety Authority advocates a “fitness for purpose” similar to fitness for function. Water quality discharge standards are set apart from receiving water standards and ‘oily water’ in sewage would still be meeting international convention obligations. MARPOL and other international agreements provide performance indicator standards but good management requires differentiation between indicators for the standard of the environment and indicators for the standard of the agency.

The **Auckland Regional Council** comments that it is difficult to measure the effectiveness in education programs as it is often influenced by what information is in the curricula. The staff perspective is of a long-term view- observing change in the future.

Environment Waikato suggests that agreement to performance outcomes with the regional community through the Annual Plan requires delicacy and careful negotiation. Inputs between local government, iwi, and community groups or non-governmental organisations require more integration (e.g. Whaingaroa community co-monitoring program).

Territorial authorities share many concerns about performance and feedback. Four councils believe co-ordination to prevent information duplication or communication breakdown is a role for regional council through forums and monitoring focus groups (MCC, WCC, NSCC, TCDC pers com, 1998). Monitoring should focus on the quality of the living environment rather than purely scientific data using a strategic process to avoid issues about performance standards (WCC pers com, 1998). State of the Environment monitoring is significant for benchmarking and to record trends (e.g. sedimentation) (MCC, TCDC pers com, 1998). Only the Auckland City Council is assessing changing trends in resource consents, using indicators (on Waiheke island). North Shore City Council has developed a monitoring document but do not have enough baseline information to proceed with actual monitoring. Two councils believe performance indicators are in place to see whether targeted objectives for the period were completed with water quality being regarded a direct measure of performance to assess whether integrated management is improving environmental outcomes (NSCC, RDC pers com, 1998). Resource consent information should be used to ensure plan and rule implementation actually measures policy outcomes on the ground. A timeframe is

required to measure the district plan (TCDC pers com, 1998). Evaluation of policy outcomes can be difficult where trends are effected by short term set backs e.g. storm events removing sand. Local government reform (1989) and recent legislation (e.g. LGA Amendment Act No.3 1996) have influenced integrated management of the coastal environment. Councils are asked to justify any activities undertaken and the costs of implementing those mechanisms (HDC pers com, 1998).

The **Auckland Conservation Board** and the **Ports of Auckland** do not use a formal evaluative process other than the use of balanced opinion to monitor the effectiveness of CEO performance. Indicators are not circulated or publicised but are audited by third parties that advise POA on setting remedial objectives. Monitoring of resource consent conditions set by the ARC is undertaken by a third party science establishment with the data simultaneously sent to the ARC and POA. Environmental compliance is monitored by a steering committee.

The **Leigh Fishers Association** and **Auckland Region Recreational Fishers** perceives few feedback mechanisms (e.g. ramp surveys). To measure outcomes the LFA maintains a database of catch analysis as the feedback required relates only to whether the fish stock is getting bigger or smaller to indicate an increase or decrease in the harvest intensity. The primary data source for monitoring fisheries should be off the fishing boat. There is a need for independent review of information and integrated management practice requires a standard for measuring and gathering the information before any analysis or integration. The **Fisheries Consultant** believes it is a quantum leap for fishing companies to initiate formal procedures such as ISO 14000 or ISO 9000. Some companies may have gone for the latter plus compliance with legislation.

9 INFORMATION NEEDS

Within the topic participants discussed concerns about systems recognising the cost of inputs and outputs, ethical and commercial constraints, and decision-making in a context of inadequate information.

Ministry for Environment believes that information for integrated management is lacking and existing data is scattered. There are goals governing the collection, storage, and use of coastal information at the national level. The expense of collecting

information from the marine environment requires a shift in focus from thinking about commercial aspects, to ethical and bio-diversity considerations.

The **Ministry of Fisheries** says that the decision-making process requires wider information about ecosystems as biological information about fish stocks has limited value. Information held within university, regional council, and government department structures (*no mention of recreational fisherman information*) needs integrating into a basic database that catalogues who, what and where. Such a system could also include protocols to protect fisheries data, for example, customary and commercial fishing information to encourage integrated information gathering.

The **Department of Conservation** agrees with Ministry for Environment about the lack of knowledge concerning the coastal environment. It perceives its role as information collection and discerning gaps. The primary information sources are the Protected Natural Area survey's, and the Coastal Resources Inventory (1991). These were data gathering exercises ('snapshots') assessing what was left but require updating. Integrated management is successful where information presented to the community is understandable and has contextual meaning.

The **Maritime Safety Authority** needs a sensible assessment of carrying capacity within coastal waters relative to available information and requires non-partisan information provision. The MSA comments that the extension to Mangare sewage ponds is an example of consultation and a referendum allowing a choice of options based on knowledge and expense.

The **Auckland Regional Council** and **Environment Waikato** believe information collection requires prioritisation and consistent protocols. ARC also considers a Forum type organisation is needed to encourage effective data collection.

Territorial authorities comment that information collection is limited by statutory restrictions under the Local Government and Official Information Acts (HDC pers com, 1998). Collection is restricted to self-imposed limits implied by statutes, or available funding because applicants see information requirements as an unreasonable cost (ACC, MCC, RDC pers com, 1998). Officers need to clearly communicate the need for information (ACC pers com, 1998) and co-ordinate collection programs in the coastal marine area with other groups (MCC pers com, 1998).

A Forum could help to avoid duplication or gaps (RDC pers com 1998). Information relating to coastal hazards and discharge quality needs to be easily accessed and have clear protocols concerning restrictions on use (already done by Environment Waikato?). Information could be obtained from resource consent applications and the acquisition cost perhaps shared through a protocol whereby loading into the database entitles particular parties to outputs (TCDC pers com, 1998). Direction for information collection is required from regional bodies as per their functions under RMA sections 35¹⁰ (RDC pers com 1998).

The **Auckland Conservation Board** comments that the legally contestable nature of effects based plans create considerable evidential and data requirements. Ecosystem and adaptive management implemented at the scale of the Gulf is not practical because of funding constraints. Despite the political risks of stalling the process, there is a need for pragmatic service based on judicious science and community good will.

Ports of Auckland needs information for meeting regulatory requirements relating to insider trading laws, monitoring for navigation responsibilities (e.g. Manukau bar) and for ballast water. Monitoring for ballast water is based on a program covering POA's ten largest clients excepting that as New Zealand's largest import port there is hardly any discharges. This information is available simultaneously to POA and the ARC and is establishing a database of real information.

The **Leigh Fishers Association** regards the superficiality of processes as a constraint on available information to achieve ICM and adds that decision-making are required to act without good information under conditions of uncertainty. The **Fisheries Consultant** suggests private enterprise meet information needs where issues closely effect them without any central integration or regulation. **Auckland Region Recreational Fishers** comment that in preferring to avoid the stigma of enforcement attached to measuring and recording data, collection should be clearly explained as being for recreational fishing purposes only.

¹⁰ The original response was RMA s.30 and 64, but has been clarified with respondent.

10 INSTITUTIONAL ARRANGEMENTS

Many respondents simply reported their functions and powers from various statutes. This is not reported because it is discussed in Chapter Four. Areas discussed relate to funding and its prioritisation, tangata whenua perceptions, non-statutory methods, and encouraging a unified approach.

The **Ministry for Environment** believes legislation should integrate institutional arrangements for management of the coastal environment within the existing context. Revenue prioritised under the LG Act must target issues externally influencing the coast (e.g. land transport). This requires central leadership, useful science communicated properly, and developing incentives for change. Devolved management depends on understanding roles and organisations working together to plug gaps. Both the Ministry and DOC prefer a multiple agency perspective to ensure all relevant values get taken abroad.

The **Department of Conservation** agrees that although small examples of coastal integrated management work well, organisations do not understand their role or those of other players. A key organisation's success in implementation will require extra skills for iwi and stakeholder involvement, encouraging communication, positive relationships, and long-term commitment. It is the process that needs simplification rather than organisations. Institutional constraints encourage a political stance and perception by Iwi groups (e.g. Hauraki Maori Trust Board) that the Hauraki Gulf Forum is an unnecessary institutional layer. Another constraint is annual program funding which conflicts with their 3-5 year operational planning.

The **Maritime Safety Authority** is limited to monitoring the standard and quality of shipping and is not mandated to be involved in the Hauraki Gulf Forum. This role would better suit the Ministry of Transport. There is a need for a conflict resolution process but not necessarily a centralised system as an issue may only affect two or three stakeholder interests.

The **Auckland Regional Council** regards institutional arrangements as beneficial with the requirements to integrate strategic and financial planning into Annual Plans.

Environment Waikato believes efficient institutional arrangements are at the lowest practical level. Institutional arrangements affect the roles of local government relating to general powers, regional policy, service delivery and delivery of iwi implementation relationships. Two complementary tiers of arrangements are mirrored in the RMA, but not the LG Act. Institutional issues exist that would allow joint management, restructuring of local government and the empowerment and representation of tangata whenua.

Four **territorial authorities** have commented on various issues relating to institutional arrangements. The present system of regional coastal plans and delegated powers provides a good framework but separate consents (river bed, water space, land use, esplanade reserve) should be streamlined via a joint consent, or one stop shop for the applicant (MCC, RDC pers coms, 1998). Hearing issues together would encourage a unified district and regional perspective and decrease the political pressure put on Hearings Committees or Planning Commissioners by applicants or affected parties (TCDC pers com, 1998). Committing to a forum that has catchment wide responsibilities is a more efficient institutional arrangements for effects based management (MCC, WCC pers com, 1998). Non-statutory documents have no legal standing and for success depend on institutional arrangements accommodating flexible and informal relationships (RDC, TCDC pers coms, 1998). Applying ideas from other communities requires overall consistency in dealing with cross boundary issues such as provided by a unitary council approach (TCDC pers coms, 1998). Iwi consultation processes are usually successful whether tangata whenua are involved at initial formulation or tagged on at the end (TCDC, RDC, pers coms, 1998).

Institutional arrangements give the **Auckland Conservation Board** a role as a jury benefiting both conservation and the Forum, as the ACB is not constrained by government policy. The Forum is an adaptive response to a potential loss of power by councils and could be a reporting mechanism. A function greater than strategic alignment requires a very strong statute for the Forum to act in a capacity that is binding on Ministers of the Crown.

The **Ports of Auckland** believe institutional arrangements must be directed at improving, in a tangible sense, the understanding of non-regulatory stakeholder issues by senior management in local government.

The **Leigh Fishers Association** believes institutional arrangements derived from treasury theory encourage a superficial management process allowing individual and vested interests to reduce other stakeholders' property rights. Institutional arrangements lack practical mechanisms or understanding about the costs of co-operative management and a gulf forum is not driven by reasonable incentives. Devolving functions to a local group is problematic when an indigenous right exists separately to the greater community and may inhibit the concept of community care.

Auckland Region Recreational Fishers believe institutional arrangements need to separate the Hauraki Gulf from other quota management areas. Including wider values within a multiple agency perspective is positive but the existing HGF must be opened to greater membership to improve its effectiveness.

11 LEGISLATIVE SUPPORT

Responses considered that this topic addressed the inclusion of values and issues by management and tying support to achieving outcomes.

The **Ministry for Environment** believes the NZCPS offers suitable strategic vision combined with the Government's Environment 2010 strategy as a driver for coastal management goals. Further strategic vision by government should include coastal and marine issues and needs to integrate the anomalies covered under various statutes of zones ranging from 19 to 320 kilometres. Artificial separation does not always result in better management of an activity or control over different effects of an activity.

The **Department of Conservation** assesses existing documents for direction and vision in undertaking ICZM. RMA statutory processes are supportive of non-statutory methods that encourage affected parties to settle before entering into litigation. Site specific plans may also be used to guide management approaches for long-term rather than specific outcomes.

Territorial authorities offer various comments about legislative support and strategic vision. Legislation¹¹ provides for but doesn't highlight the support required to acknowledge issues or values when stating, "this is what the natural environment or resource is, what is the ability of the natural environment to meet those needs?" Vision

is focused on outcomes¹² (WCC, HDC, TCDC pers com, 1998). Developing vision requires strategic tools (e.g. Vision Hauraki, HGF) and is enhanced by good practice moving beyond what the institution can appropriately set out (ACC, MCC pers com, 1998). The support of higher level policy documents for District Plans and allowance under the RMA for non-statutory plans are both elements to achieving strategic vision (NSCC, RDC pers com, 1998). Issues and impediments are consistency between district plans, building partnerships and people processes, parochialism, the political implications of management actions with these all requiring a culture change (NSCC, WCC, HDC, TCDC pers com, 1998).

The **Leigh Fishers Association** regards an integrated approach to resolving fisheries issues is prevented by local Fishermen being removed from control of the fishery. The **Fisheries Consultant** believes that commercial stakeholders need more encouragement in relation to understanding the benefit of managing commercial, recreational, and customary fisheries within an integrated system. **Auckland Region Recreational Fishers** assert that strategic vision is lacking. Opportunities exist for involvement in environmental management (land issues), fisheries management and coastal management (marine reserves) and should be tied to the recognition of a recreational fishing hereditary right written down in legislation.

12 MEASURING SUPPORT & PARTICIPATION

The answers to this topic covered methods, constraints, issues and future directions for focussing, achieving and improving ICZM across and between different groups in the Hauraki Gulf.

The **Ministry for Environment** would measure support and participation through communication strategies, voluntary incentives, provision of information, and making processes easier for people to participate. These would highlight barriers discouraging a good representation of participants. Zealots and consultation overload are issues that require negotiation amongst stakeholders. Pre-hearing meetings, joint hearings, and workshops are participatory methods useful in reducing the costs of settling disputes.

¹¹ Local Government Amendment Act 1996 (No. 3).

¹² E.g. abundant fish, clean water and shellfish.

The Ministry's role in influencing behaviour about resource management is through education and leadership in communicating stakeholder obligations.

The **Ministry of Fisheries** comments that negotiated agreements are more effective for decision-making when a mandate for participation exists but may not be necessary to reach the environmental outcomes generally required. Smaller groups involved in negotiation need the tools and a level playing field. A legislated recreational right would encourage community management but also carries responsibility and accountability.

The **Department of Conservation** believes that stakeholder involvement is proportional to the extent that an affected party bears costs of participation. The Department is also concerned that in performing mandated functions, its relationship with Iwi could disintegrate and harm future relations after any negotiated settlement. The **Maritime Safety Authority** believes current resource management may be more hierarchical than integrative.

Territorial authorities believe politics is critical in keeping support through informing every body, otherwise the community will react against proposals. There are limits to education and outreach methods for proactive community level management particularly in a climate of static rates and decreasing staff levels (MCC, RDC pers com, 1998). Co-ordinated management needs a forum for participation, and a focus, such as a local Agenda 21, park proposal or Americas Cup (ACC, NSCC pers com 1998). Tying management to wider goals such as promoting a sustainable capacity for the gulf islands, or demonstrating the effects of run off in streams is hindered by participation overload and a lack of community appreciation about the prioritisation and negotiation for environmental outcomes (ACC, NSCC, RDC pers com, 1998). The processes are a starting point for getting each community to set rules and meet environmental needs¹³ (WCC pers com, 1998). A discussion process is necessary for non-statutory methods to be effective against the lack of incentives. Applicants can facilitate the process to save on consent costs (RDC, TCDC pers com, 1998). Non-statutory methods are the first step but should be mandatory in allowing for environmental gains via trade offs to actually happen (TCDC pers com, 1998). District councils also believe politicians must convince management that negotiation is appropriate in recognising the role of Iwi as

¹³ E.g. Oratia structure plan.

kaitiaki (HDC, TCDC pers com, 1998). The relationship between the Treaty of Waitangi and local and central government is a fundamental issue for District Councils as agents of the Crown (HDC pers com, 1998). Non-regulatory protocols with Iwi or hapu groups are constrained by a lack of awareness about the limits to blanket cover protection (TCDC pers com, 1998).

The **Auckland Conservation Board** believes focussing on structure is a pragmatic political approach and the wider community is unconcerned whether management is integrated or not. More interest is assumed than actually occurs considering that the environment does not rate in the top fifteen public issues for Auckland. The link is encouraging people to make the connection by an element of political reality about the issues brought forward.

Forest & Bird and **Ports of Auckland** believe that simply focusing on the issue and increasing co-ordination rather than management change improves outcomes and achieves recognition and support.

The **Leigh Fishers Association** argues that complex management arrangements and zealous stakeholders taking control of participation processes disadvantage local level involvement. Local groups should be empowered with protection and accountability standards. Section 33 is “mealy mouthed” and needs a realistic commitment from local authorities in deciding the devolution of RMA functions to community organisations. The **Fisheries Consultant** believes integration is not an issue of national importance to the Seafood Industry Council or commercial interests. The **Auckland Region Recreational Fishers** believe that participation mandates more responsible behaviour and while not always effective can educate people to appreciate the resource to improve everyday compliance and enforcement under incentives of improved fish stocks and catch rates. The numerous population centres in the Hauraki Gulf can facilitate local management. Negotiation is necessary to reach agreement in issues like developing areas for marine farming and when achieving a concept of balance to acknowledge stakeholder interests.

CONCLUSION

This concludes the first stage of interviews to gauge stakeholder perceptions of integrated coastal management for the Hauraki Gulf. The interviews can be summarised as indicating:

1. The wider community achieves **Understanding of ICZM** through consistency over environments in co-ordinating policy tools across agency boundaries (“Evolution” & “Definition” in Chapter 2).
2. **Approach To Planning Goals** for ICM looks to compatibility of objectives with the community and other plans without going beyond statutory requirements while anticipating review (“Issues” & “Process Component- Stakeholder and Community Empowerment” in Chapter 2).
3. Applying **Theoretical Concepts** is specific to the degree of available information and the audience (“Definition” in Chapter 2).
4. **Responding to Change** cannot be accurately predicted but is anticipated by building partnerships at low levels (“Process” in Chapter 2).
5. **Achievement Processes** must account for costs and utilise flexible mechanisms based on education and involvement to provide certainty (“Process” in Chapter 2).
6. Successful **Networks** require clarity of roles and functions and be extended across the community at large (“Implementation” in Chapter 2).
7. **Promotion of IM Practices** occurs by sharing and acknowledging barriers while organisations concentrate on their contribution to an integrated approach (“Implementation” in Chapter 2).
8. **Performance and Feedback** requires qualitative and quantitative information for consistency in assessing environmental and policy trades to prevent duplication and wastage (“Evaluation” in Chapter 2).
9. Future **Information Needs** will be pooled within a system recognising limitations but accommodating diverse input and output needs based on communicability,

utility and user cost sharing (“Process Component- Research, Monitoring, and Information Management” in Chapter 2).

10. **Institutional Arrangements** must be flexible and committed to involve low levels (“Process Component- Governance” in Chapter 2).
11. **Legislative Support** should be focussed on outcomes and needs strategic tools to encourage creative arrangements (“Issues” in Chapter 2).
12. **Participation** is measured by removing barriers through negotiation and focus to implement binding non-statutory tools for achieving integrated coastal management (“Process Component- Stakeholder and Community Empowerment” in Chapter 2).

CHAPTER SIX: ANALYSIS AND FRAMEWORK DEVELOPMENT

INTRODUCTION

The purpose of this analysis is to interpret the interview findings and the conditions needed to achieve ICZM in the Hauraki Gulf. A framework for the analysis is set out. The chapter briefly outlines challenges for qualitative analysis and then demonstrates the criteria adapted from the literature review (summarised in conclusion of chapter Two). The analysis discusses achievable ICZM processes and practices in New Zealand, based on theory and the interviews, and briefly outlines action points for each criterion.

Interview responses are analysed to determine whether:

- Issues not covered by theory are unique to the Hauraki Gulf?
- Innovation occurring in the Hauraki Gulf could be useful for theorists?
- Issues resolved by theory are an ongoing problem in the Hauraki Gulf?

Criteria are based on the seven-step ICZM process and the interview topics (Appendix 3).

CHALLENGES FOR ANALYSIS

Analysis of qualitative information is subject to a number of difficulties including the need to relate case study responses to criteria developed from the literature review (Bouma, 1993). In interpreting responses researchers may have difficulty deciding whether to analyse (i.e. considering the whole and describing inter-relationships between components) or simply compare and contrast results (i.e. examining characteristics to demonstrate similarities and differences). Ambiguity may exist in determining or measuring the actual relationships within the research context. There is also a question about what individual or collective knowledge is required during policy formulation, implementation, monitoring, and evaluation of coastal management (Wolcott, 1990). In this analysis, the criteria developed from Chapter Two are discussed in the context of target groups, innovating organisations, and interactive settings. This format will provide the basis for a Hauraki ICZM process and framework for ICM applicable to the research participants and other groups.

ANALYTICAL FRAMEWORK

An analytical framework for evaluating interview material against theory has been developed based on criteria summarised in Chapter Two. These criteria have been restructured for analysis (Table 7). Criteria are matched with the ICZM process and further divided within the context of three elements: the target group, innovating organisation and interactive setting (refer glossary of terms for definition). These elements can be framed into questions being:

1. Who is to be changed? (*Target group*)
2. How should change occur? (*Innovating organisation*)
3. Where should change be occurring? (*Interactive setting*)

TABLE 7: CRITERIA FOR ANALYTICAL FRAMEWORK.

1. Knowledge & Compatibility: Are respondents aware of the application of ICZM to the Hauraki Gulf?
2. Objectives and Consultation: Do the strategic objectives of organisations involved in the Hauraki Gulf meet the goals characteristic of ICZM?
3. Translation: What is the application of theoretical concepts to coastal management in the Hauraki Gulf?
4. Adaptive Versus Reactive: What evidence of flexibility exists within management structures influencing the Hauraki Gulf?
5. Uncertainty: How is innovation being used to mitigate a lack of knowledge in decision making regarding the Hauraki Gulf?
6. Effective Links: What evidence suggests respondents recognise being tied into a larger structure of management within the Hauraki Gulf?
7. Education: What mechanisms are promoting knowledge transfer for successful ICZM in the Hauraki Gulf?
8. Assessment Techniques: What structures are gauging the management performance in improving and resolving environmental issues or problems for the Hauraki Gulf?
9. Database / Baseline: What information is necessary for coastal management in the Hauraki Gulf?
10. Flexibility & Involvement: How are institutions influencing the outcomes in the Hauraki Gulf?
11. Collective context: What characteristics is legislation enhancing for ICZM in the Hauraki Gulf?
12. Barriers / Incentives: Are there positive or negative factors influencing the direction of ICZM for the Hauraki Gulf?

DISCUSSION OF ANALYSIS

This section of the chapter pulls together the findings of the interviews (Chapter Five) summarised above with theory from the literature review. Each of the 12 topics are discussed as recommendations based on theory (see box), followed by actions for interview

respondents. Specific actions are divided according to whether they belong to central government (MFE, MOF, DOC, and MSA), regional and territorial authorities, or others (Iwi, non-regulatory stakeholders). They may include recommendations for joint action. None of the recommended actions are prioritised. To do so requires a basis for evaluating which are the most important actions. This could be by an assessment of if the action fails, then what are the consequences (ACB pers com, 1999). Prioritisation would also require a framework for time tabling that could be developed for implementing immediate actions within three years (e.g. action 1.6) through to implementing and achieving longer term actions (e.g. action 8.8) of up to 20 years.

Please refer to Appendix 2 for the description of acronyms used in the text.

1 KNOWLEDGE & COMPATIBILITY

General: integrated management and planning recognises physical, socio economic and political interconnections.

TG: all converging and competing interests in coastal areas and the coastal zone.

IO: continual redefinition and reassessment of competing interests to minimise conflict and maximise benefits.

IS: coastal resources and coastal systems.

Central government, regulatory agencies, Iwi, and the ‘wider community’ are considered as the target groups achieving ICZM in the Hauraki Gulf. This is considered vertically in reference to the NZCPS or other national policy strategies but with little comment on the horizontal dimension other than for landowners and neighbours. In regard to innovation, organisations should be developing appropriate policy frameworks with mechanisms that include other interests and pursue integration by standardising rules and objectives.

Respondents all believe that the interactive setting involves the physical environment, planning processes, and community meetings but they do not perceive that these settings are useful for promoting interaction between resource management and fisheries processes or necessarily between agencies and Iwi.

Recommended Actions

1.1 All agencies involved to develop policy tools that cross physical and organisational boundaries and statutory limitations to identify collective issues, benefits and conflicts.

Specific Actions for Central Government

1.2 DOC to take lead agency status for co-ordinating role in the Hauraki Gulf¹

1.3 MFE to monitor process and resulting framework application (or similar, e.g. HGMP Bill).

1.4 MFISH should:

(a) Involve all other organisations with responsibility or operations in forming “sustainability plan” for the wider aquatic environment of the Hauraki Gulf.

(b) Develop framework for determining fish harvest levels, type of research and level of compliance required,

(c) Assess the effects of integrated management on small-scale fisheries.

Specific Actions for regional councils and territorial authorities

1.5 RC’s should use NZCPS to prioritise issues within regional coastal plans.

1.6 TA’s should:

(a) Determine levels of awareness in their local communities about coastal issues.

(b) Develop an evaluative process in plans for measuring changing attitudes and behaviours.

1.7 LA’s should provide education to residents explaining the benefits of and mechanisms for an integrated approach.

1.8 RC’s to compare the Forum approach with former Hauraki Gulf Maritime Park systems.

Specific Actions for others

1.9 PCFE / M F / RC’s to assess the degree of co-operation through resource management and fisheries management processes.

1.10 DOC / RC’s and local communities should form joint administration or oversight for local issues.

¹ DOC may be an ineffective lead agency based on low funding, little accountability with no dynamic to drive this operation.

2 OBJECTIVES AND CONSULTATION

General: provides a mandate to achieve aims such as sustainable management through compatible objectives between top and bottom political levels.

TG: involving a broad spectrum of interest groups to achieve balanced resource use.

IO: processes should be transparent, open and accessible with multidisciplinary teams.

IS: initiated and guided within the local ecosystem.

In discussing approaches to planning and goals, target groups for the Hauraki Gulf should include regional government, local authorities, Iwi and local communities. The approach for an innovating organisation would place emphasis on “bottom up policy” and gradual stepped improvements to minimise conflict and involve wider consultation by team building, education and review processes within the limit of statutory responsibilities. The appropriate interactive settings are the processes available to weight viewpoints when formulating policy documents, and participation in various forums and at the local scale (requiring consistency and flexibility to prevent stalling of larger scale processes).

Recommended Actions

- 2.1 Managers to develop strategies for effective communication and gradual/stepped improvement.
- 2.2 Organisations and stakeholders to seek consistency across public/ private boundaries and between management levels.

Specific Actions for Central Government

- 2.3 MFE should:
 - (a) Guide effective representation of Hauraki Iwi in process.
 - (b) Develop checklist of perspectives /values to be included in developing plans.
 - (c) Develop a checklist of components included in plans that are to be considered in regard to the coastal environment.
- 2.4 MFISH to develop a process model for integrating fish management processes with the environmental directives of the NZCPS.
- 2.5 DOC (working with regional councils, Iwi and appropriate interests) should:

- (a) Establish a region priority list of conservation issues appearing in resource consent applications for regional council and territorial authorities to have regard for.
- (b) Assess degree of information about the coastal environment that can be provided from the 'bottom up'.

2.6 MF to distinguish or amend conflicting objectives in Fish management.

Specific Actions for regional councils and territorial authorities

2.7 ARC and EW to establish joint education approach for promoting different options to the wider community to deal with coastal issues.

2.8 LA's should:

- (a) Involve council officers in establishing community planning documents
- (b) Jointly categorise the range of controls used or available for integrated management in Hauraki Gulf.

Specific Actions for others

2.9 MF and LA's to develop cost schedule for assessing expenditures relative to public used in coastal and fisheries management issues.

2.10 DOC and MF to assist tangata whenua to develop customary protection approach relevant to regional and territorial authorities.

2.11 HGF to develop a centralised decision-making process shared between territorial authorities, regional councils, DOC, iwi and stakeholder organisations, and between public plans and landowners.

2.12 MF, DOC, and Local authorities to develop and review processes for implementing new information.

2.13 Forest & Bird and ACB are to generate community mobilisation for more direct involvement into Hauraki Gulf planning issues.

3 TRANSLATION

General: integrating concepts relating to sustainable resource use into practice

TG: interactions between stakeholders in the coastal zone whom are given equal status.

IO: comprehensive, strategic, adaptive, multidisciplinary, and ecosystem orientated approaches.

IS: political, planning and policy systems

The principle target groups for translating holistic management into practice are regional and local government, tangata whenua and stakeholder groups (e.g. fishing companies, Ports of Auckland). An innovative organisation in this situation would be developing relationships, operating under a continual improvement model, gaining an understanding of its ecosystem interactions, and designing empowerment processes that allow effective use and access of anecdotal and indigenous information. Adaptive management is considered the most applicable mechanism at a derivative level. Theoretical concepts (e.g. ecosystem management, etc.) should be implemented within the context of financial planning. The interactive setting for theoretical concepts crucial to ICZM is widely regarded as the field and community levels influenced within a cultural perspective.

Recommended Actions

3.1 Organisations should encourage the implementation of integrated management concept as a derivative of stakeholder issues with community involvement, and linked to financial planning.

Specific Actions for Central Government

3.2 MF should develop a schedule in consultation with Iwi and stakeholder groups to move the QMS towards an ecosystem based management approach.

Specific Actions for regional councils and territorial authorities

3.3 RC's should:

(a) Define the Hauraki Gulf ecosystem as a means of determining management boundaries for the Hauraki Gulf Forum.

(b) Develop an acquisition strategy for buying ASCV based along ecosystem management principles (corridor, representative) to integrate different types of environments.

3.4 Territorial authority's to develop and implement a translation process that encourages the community to support adaptive and ecosystem approaches involving local issues.

3.5 Tangata whenua to approach LA's for assistance in developing kaitiaki management plans that recognise Treaty obligations.

Specific Actions for others

3.6 DOC and regional councils to develop management tools based on adaptive and ecosystem management principles.

3.7 Forest & Bird should promote urban ecosystem management principles especially in relation to large industrial users of the coastal environment.

3.8 HGF to initiate a consulting process (bring in fishing groups) to establish a base line measurements for environmental performance.

3.9 HGF and LA investigate strengthening community involvement to mitigate loss of community feeling in moving integrated management from the small to large scale.

4 ADAPTIVE VERSUS REACTIVE

General: affected by decisions/ actions of many local users and sub-national units of government.

TG: community, stakeholders, and managers.

IO: categorise, weight, evaluate, prioritise development against political, social and economic background

IS: local case specific level.

Iwi, Community, regulatory agencies and forum groups are regarded as the target groups influencing responses to change. To formulate responses, an innovating organisation should integrate hard and soft science (e.g. combining Iwi, Land & Beach Care monitoring groups with SOE monitoring) to improve the assessment of policy/plan outcome robustness. It would also set response strategies within the organisations financial planning context, allowing for jurisdictional limits when achieving a response will require working partnerships with participating communities (e.g. local Agenda 21 strategy. The interactive setting is by specific example in combination with forums (e.g. HGF)².

² A future management body for the Hauraki Gulf may include the Manukau harbour to integrate management of the region's coastal environments (WCC pers com, 1998).

Recommended Actions

4.1 Organisations and stakeholder groups should assess change in a wider context but with issue and information collection focussed to anticipate specific local scenarios by encouraging partnership.

Specific Actions for Central Government

4.2 MFE to advocate for central government and local authorities to include links between hard and soft science within policy documents using a multi disciplinary perspective

4.3 MF should develop a framework of research linking incentives to providing social, economic and biological trends.

4.4 DOC should:

(a) Investigate community perceptions about its role in the coastal environment.

(b) Build and develop a communication process/ strategy/ checklist for initiating marine reserve site selection and application.

(c) Assess management priorities for intervention in coastal environment based on positive impacts.

Specific Actions for regional councils and territorial authorities

4.5 RC's and TA's should explain the existing prioritisation of functions that influence the natural environment in their ten-year financial plans.

4.6 TA's to develop responses aligned with local community participatory processes.

4.7 TA's are to declare ratepayers interests in monitoring issues.

Specific Actions for others

4.8 HGF should:

(a) Assess development of Coast/Land care network linked with knowledge about the ongoing trends for cumulative effects of urbanisation.

(b) Assess how community and Iwi interests can be better represented.

(c) *Recognise that marine commerce is essential to Auckland and NZ's economy. This legitimate and essential activity must be specifically prescribed in the rules for the Gulf.*

4.9 HGF/ RC's to assess the effectiveness of devolved roles versus centralised roles in managing the coastal environment.

4.10 MF and RC's to recognise the policy formulating initiatives of various stakeholder groups (e.g. ARRF).

5 UNCERTAINTY

General: continuously changing interactions in the set of coastal zone elements relevant to the issue/problem

TG: managers of agencies and stakeholder organisations

IO: management practices and systems that are flexible, comprehensive, adaptive, pluralist, proactive, and equitable.

IS: management strategies

Achievement processes are targeted at Iwi and non-regulatory stakeholders and communities through the assistance of local government to account for uncertainty in coastal management. To deal with uncertainty, an innovating organisation would develop mixtures of voluntary, market, and statutorily based mechanisms to create positive environmental outcomes (e.g. combining empowerment, education, heritage funding and public consultation). This would be achieved through an interactive setting of sector group arrangements, submission processes, and community demonstration of methods (e.g. bio composting toilets for public reserves at Oneroa, Waiheke Island).

Recommended Actions

5.1 Agencies and stakeholders should develop methods to assess risk perception and for effective involvement, based on least cost participation, dialogue and advocacy to overcome political implementation barriers.

Specific Actions for Central Government

5.2 MF to develop a framework for achievement of Iwi and stakeholder goals based on resource sustainability and environmental outcomes.

Specific Actions for regional councils and territorial authorities

5.3 RC's should:

- (a) Develop effects based approaches for Regional Coastal Plans that are derived from principles and/or policies of the NZCPS.
 - (b) Use education to gain Iwi and stakeholder perspective on level of financial commitment for evaluating and assessing the indirect effects of non-regulatory tools.
- 5.4 Territorial authorities to assess ways of correlating research and political processes for formulating environmental policy.

Specific Actions for others

- 5.5 M F / RC's /HGF to develop a process that experiments with integrating least cost regulation combined with Iwi and community ownership of projects, programs in the Hauraki Gulf.
- 5.6 POA to compare different models or scenarios for dialogue or co-operation to assess whether application at various stages would create savings in management expenses.
- 5.7 HGF / TA' should assess advocacy from Iwi and stakeholder groups as a critical evaluative process for designing and implementing adaptive methods.
- 5.8 DOC / RC's / TA's to assess if achievement of environmental outcomes is more successful under a structured or unstructured process.

6 EFFECTIVE LINKS

General: ICZM networks are limited by a lack of human capacity and public awareness about relevance.

TG: communities, managers, and organisations

IO: provide incentives and guidelines, more informal and autonomous operations, concentrate on strategic objectives combining centralised and market driven networks.

IS: local community, field and program level.

Effective Networks would target tangata whenua, non-regulatory stakeholder groups, regulatory agencies and local government to increase effectiveness. Network formulation is either structural or outcome driven and in this regard an innovating organisation should have clear objectives. It should establish network models for communicating information both internally and externally that are informally based and effectively link statutory and voluntary requirements with the financial implications of management decisions.

Interactive Networks can be established at a forum level or as looser structures within communities that are tied to the former by statutory processes.

Recommended Actions

6.1 Network participants should benefit from improved horizontal communication, clarity in leadership and responsibility for maintenance issues occurring within local government units and between business and government.

Specific Actions for Central Government

6.2 MFE to promote working examples of integrated structures spanning central government, local authorities, Iwi and stakeholders. Examples from other organisations should be quoted to achieve good environmental results.

6.3 DOC to initiate an advisory service to mediate demarcation issues in the coastal environment.

Specific Actions for regional councils and territorial authorities

6.4 TA's should investigate appropriate methods to promote consistency between neighbouring and adjacent councils.

Specific Actions for others

6.5 HGF should carryout the following actions:

(a) Establish a strategy promoting leadership in coastal issues and a process for clarifying roles and responsibilities in the coastal environment.

(b) Study whether restricting forum membership is actually helpful in achieving good environmental results.

(c) Use SOE reporting as a method of assessing whether co-ordination is achieving more effective information collection.

(d) Develop a strategy for listing all key interest groups within a district or region to be consulted during submission and consent processes (colour code for each area).

(e) Investigate how integrated practice is strengthened when linking various networks through communication.

6.6 POA CEO could evaluate the structural consistency of activities undertaken in common with ARC and Auckland City Council to measure the efficiency of integration.

6.7 ARC /HGF to investigate how it would improve their utility for groups such as the LFA and ARFA.

7 EDUCATION

General: ICZM practice is focused towards techniques utilised at place or issue specific scales but aware of larger scale effects.

TG: managers and stakeholders

IO: case study encourages inquiry and situation diagnosis

IS: community, field and policy levels

The primary target groups for promoting better practice are communities, forum groups and regulatory agencies with secondary assistance from central government, Iwi, professional groups, developers and non-governmental organisations. The innovating organisation will improve practice by implementing strategies to build relationships, protocol agreements, use of extension workers and facilitators, or to focus inter-organisation multi-disciplinary groups. All methods would be evaluated in terms of their cost effectiveness and performance as an ecosystem management approach through community surveys within an Annual Plan. Facilitating integrated management practices is achieved within an interactive setting at community and forum levels.

Recommended Actions

7.1 Organisations to encourage participatory practices for education, information collection, monitoring, etc. at the small or local scale by increasing accessibility to Iwi, stakeholder groups and communities.

Specific Actions for Central Government

7.2 MFE should assess the general state of integrated management practice across agencies and relevant groups and promote appropriate educational tools to improve understanding.

7.3 MF should develop participatory fisheries management processes based on cost effectiveness by studying resource consent process under the RMA.

7.4 MFE, MF, and DOC to investigate developing and implementing mandatory principles for participatory decision-making.

7.5 MSA to improve co-ordination and integration with Hauraki Gulf Forum in roles for coastal hazard marine pollution response.

7.6 DOC should review the process of protecting marine areas to make it more focussed as an outcome facilitating community empowerment.

Specific Actions for regional councils and territorial authorities

7.7 RC education facilitators to be trained in awareness about incorporating knowledge outside their own organisations.

7.8 TA's with delegated powers should assess how promotion of local grass roots initiatives could benefit their management and environmental outcomes.

7.9 RC and TA's could investigate the effectiveness of different mixes of non-regulatory methods.

Specific Actions for others

7.10 HGF to look at co-ordinating different Beach and Coast care groups to improve environmental outcomes.

7.11 HGF / TA's should develop broad education strategies tied into local issues to lessen resistance from communities towards policies and plan implementation.

8 MONITORING TECHNIQUES

General: measure performance for environment based on indicators of policy or its outcomes

TG: managers, iwi, stakeholders and non-governmental organisations

IO: apply evaluation techniques based on perceptions of performance to include new information, mitigate uncertainty, and ensure consistency of objectives

IS: policy documents and statutory processes (consultation – negotiation).

Regional government, territorial authorities, iwi and community groups are targeted for developing monitoring mechanisms. Evaluation and performance of policies and its outcomes depends on appropriate standards, fitness for purpose and whether sharing information and consistency of indicators is agreed through the negotiation of affected parties. Feedback mechanisms should fit within a framework of environmental and

financial accounting, and provide for independent review so that the innovating organisation maintains transparent decision-making. Developing appropriate feedback mechanism requires a setting that links regional policy documents across co-ordinating bodies and local monitoring programs or processes.

Specific Actions for Central Government

8.1 MFE to publicise guidelines and advocate for indicators that are meaningful to local communities.

Specific Actions for regional councils and territorial authorities

8.2 Regional councils should require that monitoring and evaluation processes can be undertaken with different types of information (e.g. anecdotal, statistical, etc).

8.3 Regional councils to promote guidelines for monitoring co-ordination among local authorities.

8.4 Regional councils and territorial authorities to develop unified consistent, co-ordinated processes for collecting, transferring and reporting resource consent information.

Specific Actions for others

8.5 DOC / RC's and TA's should develop processes and techniques for field level evaluation of organisational performance.

8.6 Central government agencies and forum groups should initiate development of a standardised measure (e.g. national EPI program) integrating comparable indicator measures for land and marine management at regional and local scales.

8.7 HGF should:

(a) Assess and develop evaluation goals based on a regional scale or issues and backed by RMA section 2 and NZCPS.

(b) Form evaluation panel to review reporting of SOE data from members.

(c) Decide appropriate performance standards for application to policy, its outcomes and different types of stakeholders.

(d) Determine indicators that are significant for achieving co-ordination and integrated management by LA's.

(e) Co-ordinate the monitoring of marine reserves and ASCV's within the coastal zone.

(f) Develop protocols for matching resource consent information against rule implementation and policy outcomes of its constituent members.

8.8 HGF / RC's to encourage transparent decision-making by developing a process for assessing fiscal versus environmental risk for policy and programs.

8.9 RC's / DOC to develop model for discounting short term adverse natural impacts against long term environmental trends.

9 DATABASE

General: providing relevant information about trade offs, options for decisions relating to development and protection.

TG: scientists and managers

IO: cost effective, repeatable, non-destructive, robust models and frameworks matching issues to support programs

IS: Geographic Information Systems network.

Core target groups for providing information are central and regional government with input from private enterprise, Iwi, non-regulatory stakeholders and communities. Effects based planning and ecosystem management approaches require considerable information and funding. Decisions should be made independent of its availability, and in achieving an efficient result the innovating organisation should prioritise data consistency, protocol agreements for bartering and sharing information, and information clearly presented and accessible. Information needs are met in interactive settings of databases, forums and consent processes.

Recommended Actions

9.1 Organisations to develop cost sharing and sensitivity protocols for information collection. Databases should hold and present data in a way that is relevant to the intended audience.

9.2 Organisations to adopt processes linking decision-making with expense and availability of data.

Specific Actions for Central Government

- 9.3 MFE to formulate discussion paper for a set of national coastal goals based on Environment 2010, consideration of costs and of linking different information.
- 9.4 MF to develop a fish management information base, encouraging collection from various commercial, customary, and recreational sources based on ethical checks and balances.
- 9.5 DOC to co-ordinate the prioritisation of reviewing its PNA, Crown Research Institute databases with the needs of territorial authorities.
- 9.6 MSA to work with Hauraki Gulf Forum to develop protocols for information provision and accessibility to meet it's needs.

Specific Actions for regional councils and territorial authorities

- 9.7 TA's need to develop protocols for sharing information with neighbouring territorial authorities.

Specific Actions for others

- 9.8 HGF should:
- (a) Investigate a protocol/checklist for preventing duplication and requires a shared cost structure for information inputs and outputs.
 - (b) Develop a pragmatic policy for implementing adaptive and ecosystem management principles for the Hauraki Gulf.
- 9.9 ARRFA / MF to develop policy goals for the collection of recreational fisheries information.

10 FLEXIBILITY & INVOLVEMENT

General: Effective ICZM create durability that is enhanced by organisational capacity building.
TG: government agencies, stakeholders, non-governmental organisations, and communities.
IO: co-operation, negotiation and analysis to develop institutional structures that reduce complexity and uncertainty in planning and management.
IS: social, physical and economic environments

In achieving effective institutional arrangements those considered as target groups include central and regional government, local authorities, and Iwi that can establish programs for stakeholder and community action to resolve environmental issues. Solutions should be

undertaken within the context of existing legislation with the innovating organisation providing leadership, communication, research and facilitation to mitigate conflict. This can be in an interactive setting achieved through decision-making at the lowest practical level via statutory or non- statutory methods under partnerships provided by forum approaches.

Recommended Actions

10.1 Organisations to look at process simplification under a unified multiple stakeholder perspective that integrates issues with financial conditions underlined by an overall consistency when dealing with different interests and boundaries.

Specific Actions for Central Government

10.2 MFE to advocate incentives for change based on non-statutory methods.

Specific Actions for others

10.3 HGF should:

- (a) Demonstrate accessibility and incentives for its purpose to the wider community.
- (b) Provide guidelines about co-ordinating expenditure amongst members for achieving environmental outcomes.
- (c) Investigate simplified dispute resolution processes.

10.4 DOC / RC's assess significance of non-regulatory methods (partnership, communication) as a first step.

11 COLLECTIVE CONTEXT

General: requirement to develop a collective agreement for a long-term perspective in assessing what the coast is and what it means to society.

TG: regulatory agencies, stakeholder organisations, and communities.

IO: envisioning workshops, and community mobilisation.

IS: Community participation processes.

Strategic vision is focused on environmental outcomes that under current statutes specifies local authorities and central government as target groups required to build in the involvement of Iwi and other stakeholder interests. Achieving a consistent context will

require the innovating organisation to follow broad policy directions in responding to specific issues using creative arrangements and good practice to guide management approaches. This indicates a culture change towards accommodating diverse interests within interactive setting such as forums and negotiated settlements at a regional scale.

Recommended Actions

11.1 Individual organisations to develop strategies mandating consistency in the management of different activities and encouraging issue/problem solutions that look outside the square in regard to methods and interested parties.

Specific Actions for Central Government

11.2 MFE should:

11.3 Advocate integration of the various zoning provisions under the legislation affecting the marine/ coastal environment.

11.4 Develop guidelines on linking NZCPS and Environment 2010 goals into TA policies.

Specific Actions for regional councils and territorial authorities

11.5 LA's develop non-statutory plans focussed on achieving buy in from stakeholders.

12 BARRIERS & INCENTIVES

General: acknowledging and weighting values by participation and empowerment of interest groups for collective agreement in plan & strategy development

TG: managers and communities

IO: specific communication strategies, strategic thinking, evaluation techniques, use of facilitators and equalising procedures in negotiation.

IS: participation process during policy or proposal development

Enhancing participatory processes will involve central, regional and local government authorities balancing decision-making to target the involvement of Iwi, communities and weakly empowered stakeholder groups. Building participation is required of the innovating organisation acting under time, staff and funding constraints for such programs, and to accomplish participation goals should use informal non-statutory methods as a first step. Stakeholder involvement requires an interactive setting of realistic commitment from

regulatory agencies focused on a specific forum or proposal (i.e. Americas Cup or Park) development as the starting point for building support.

Recommended Actions

12.1 Organisations should assess their goals in terms of requirements to provide for participation by other groups in their management decisions and, setting a direction for stakeholder involvement based on negotiation to resolve conflicts or issues.

Specific Actions for Central Government

12.2 DOC should facilitate conservation management programs with Hauraki Iwi to build the capacity of the later group in resource management.

12.3 MFE should facilitate programs involving Hauraki Iwi to build capacity of the later.

Specific Actions for regional councils and territorial authorities

12.4 LA's should:

- (a) Actively practice negotiation as a method for removal of barriers to the use of integrated management mechanisms.
- (b) Recognise a kaitiaki management structure integrating Hauraki iwi, resource and fish management processes.

Specific Actions for others

12.5 MF / HGF to provide support for participation of less empowered groups.

12.6 TA's should communicate the options for non-regulatory methods based on the cost of their implementation and discuss how to fund the management program.

12.7 HGF / RC's to communicate the benefits to environmental outcomes through using integrated management mechanisms to the wider community.

12.8 HGF to promote and facilitate local management, recognising and basing decisions at that level, while ensuring communities appreciate the wider importance of their areas through the use of non-statutory community plans.

A FRAMEWORK FOR ICZM IN THE HAURAKI GULF

From the analysis above it is possible to develop a process model specifically for ICZM in the Hauraki Gulf (Figure 6). Synthesising the interview and literature material has resulted in formulation of a framework that would assist current coastal management in the Hauraki Gulf. This model would fit under the current institutional framework (refer Chapter Four). Figure 7 outlines a range of current instruments fitting within an ICZM framework under the New Zealand context. Arrows indicate iterative feedback between each step of the ICZM process.

Each box in Figure 6 represents a summary of the analysis that includes examples of the three key areas. Box 1 relates local issues (Figure 6) to meet a national context (Figure 7) as the best for fulfilling ICZM criteria (Appendix 4). Box 2 (Figure 7) gives an example of varying the rules for subdivision in response to local preferences relating the ICZM attribute of flexibility to meet change fitted with the economic implications (Figure 6). Box 3 (Figure 6) summarises the major issues that influence the choice of mechanisms (Figure 7) to fulfil ICZM criteria of managing without full knowledge under co-operative structures (Chapter Two). Box 4 (Figure 6) achieves ICZM by providing clarity and multi-value perspectives in policy development processes (Figure 7). Box 5 (Figure 6) gives examples of mitigating uncertainty by innovative methods (Figure 7). Box 6 (Figure 6) summarises networks and links that are expressed in policy documents (Figure 7). Box 7 (Figure 6) outlines current activities that provide information for ICZM for performance and participation perspectives to fulfil consistency criteria (Figure 7).

RESPONSES

As per the methodology, the analysis and initial framework were sent out to interview participants for the comments and suggestions for change. Their responses have been collated and are presented in a summary below (Table 8). The purpose for the table is to show that feed back has taken place with suggestions by respondents being helpful in modifying the framework.

TABLE 8: SUMMARY OF RESPONSES TO FRAMEWORK & SPECIFIC ACTIONS

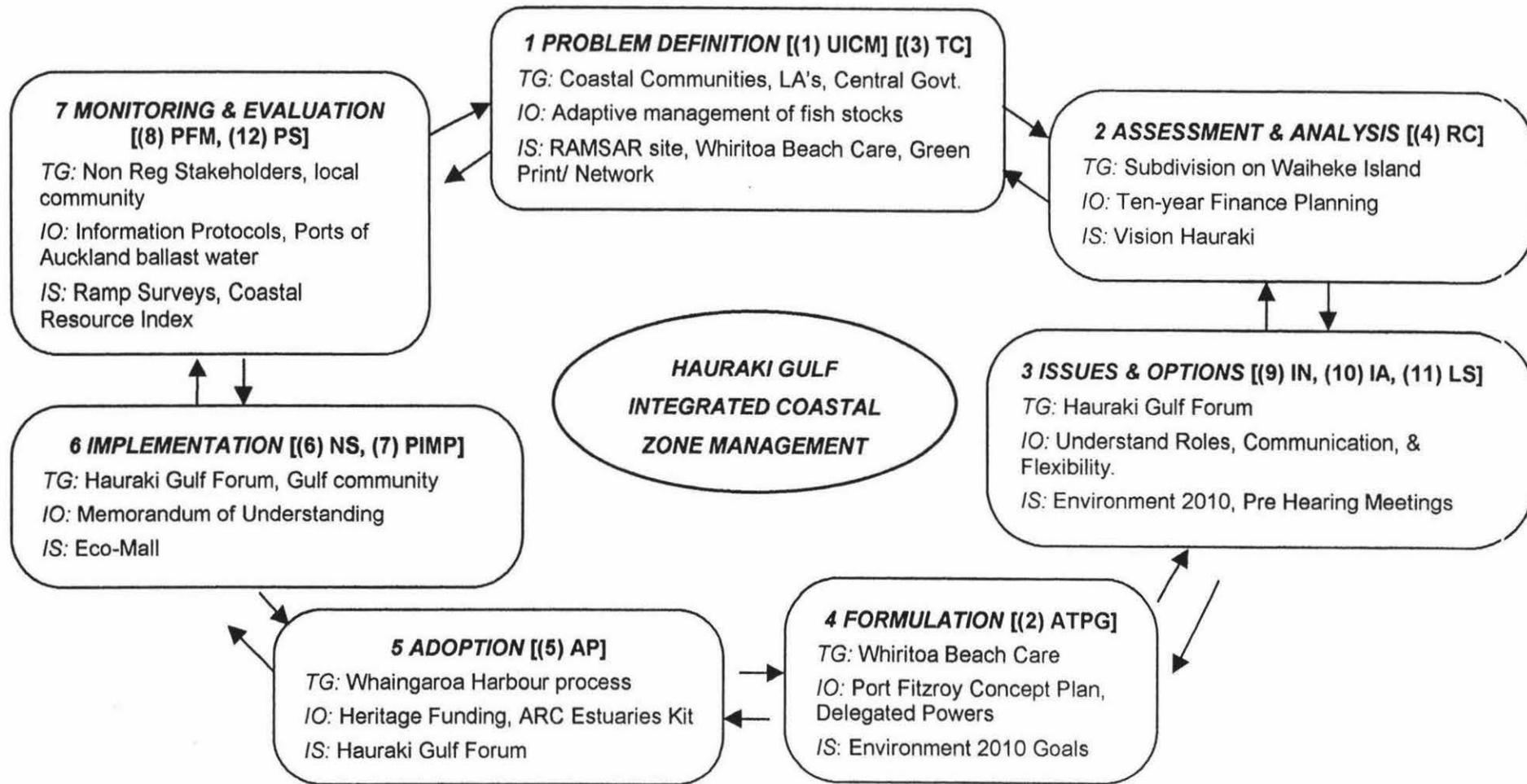
<i>PARTICIPANT</i>	<i>RESPONSE</i>
MARITIME SAFETY AUTHORITY	<ul style="list-style-type: none"> • Confused by jargon in analysis. • Marine pollution management is responsibility of Regional councils (Action 7.5) • Information for action 9.6 currently available to public.
ENVIRONMENT WAIKATO	<ul style="list-style-type: none"> • Compare actions with HGMP Bill • Hauraki Gulf Forum to be aligned with central government and LA's, not 'others'.
AUCKLAND CITY COUNCIL	<ul style="list-style-type: none"> • More direct links in process framework (e.g. between monitoring and evaluation (7) to formulation (4)) • More control to central government • Outline actions for community environmental groups • Already look at methods across councils (6.4)
PORTS OF AUCKLAND	<ul style="list-style-type: none"> • Insert 4.8 (c) to recognise that marine commerce is essential to Auckland and NZ's economy. • Have undertaken actions 5.6 & 6.6 • No mention of downsizing local government to improve outcomes.
AUCKLAND CONSERVATION BOARD	<ul style="list-style-type: none"> • Need a prioritisation scale and costings of actions • Actions are very regulatory focussed, need acknowledgement of private landowners and private sector. • HGF at centre of framework to monitor ICZM from inside.
AUCKLAND REGION RECREATIONAL FISHERS	<ul style="list-style-type: none"> • Do not link Hauraki Gulf with Manukau Harbour. • Emphasis on Hauraki Gulf Forum adds more bureaucracy. • Over reliance for action on TA's & LA's

A proposed Hauraki Gulf Marine Park Bill will be a key feature for integrating the management of different agencies and stakeholders in the Hauraki Gulf region. Points of interest about the Bill for this thesis include: legislating functions of the Hauraki Gulf Forum, recognising economic activity within Ports of Auckland, recognition of the complex inter relationships in the Hauraki Gulf environment, statements about ensuring management in an integrated fashion, links from the Bill to the Resource Management Act, Conservation Act, & Fisheries Act, inclusion of public and private land within a marine

park, regard to Treaty obligations, and a duty to publish a 3 yearly report. Respondents commented that the current Bill will not successfully achieve ICZM as it does not include recognition of non-statutory groups representing significant stakeholder organisations, no inclusion of local authorities parks and reserves, and a lack of mechanisms to give private land holders the option of using land covenanted for conservation purposes.

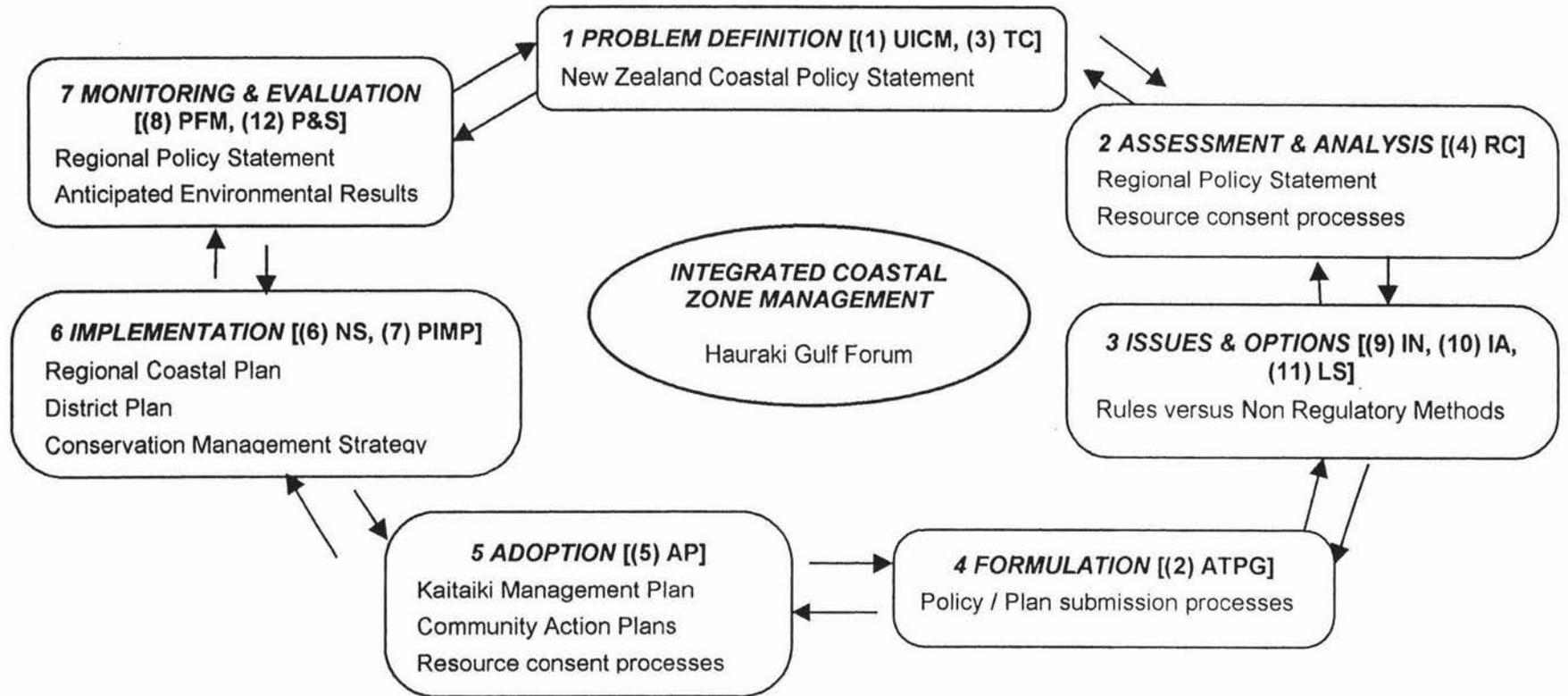
CONCLUSION

The theory and interview material has been reviewed to determine what actions are needed by various organisations to achieve ICZM for the Hauraki Gulf. Issue relationships between target groups, innovating organisations, and interactive settings have been determined. Issues identified, but not covered in theory, relate to clarifying and interpreting organisational roles and promoting a culture change. These require greater two-way involvement of regulatory agencies, Iwi and stakeholder groups. Issues in common between theory and practice relate to the importance of relationship building and education. A clear requirement exists for institutional capacity building able to make decisions at the smallest practical level to be effective against uncertainty although this is not adequately practised. Finally, there are issues resolved by theory but problematic for the Hauraki Gulf. These could include patch politics (across local government), loss of willing community involvement, and the bureaucracy evident in interactions between central, regional, and others concerned with resource management in the Gulf. Attention should be focussed on encouraging networks and using advocacy and other non-statutory methods to create workable outcomes benefiting the environment. The process framework discussed above will assist all groups to know what can be done to improve environmental outcomes. Some participants have reviewed the framework and recommended / specific actions. Their comments range from concerns about the powers of the Hauraki Gulf Forum and increasing local government bureaucracy, the ability of a 'marine park' to improve environmental outcomes, and recognition of economic values (Table 8).



ABBREVIATIONS USED IN TEXT BOXES:

(TG) Target Group, (IO) Innovating Organisation, (IS) Interactive Setting, (UICM) Understanding Integrated Coastal Management, (ATPG) Approaches to Planning & Goals, (TC) Theoretical Concepts, (RC) Response to Change, (AP) Achievement Processes, (NS) Networks & Structures, (PIMP) Promoting Integrated Management Practice, (PFM) Performance & Feedback Mechanisms, (IN) Information Needs, (IA) Institutional Arrangements, (LS) Legislative Support, (PS) Participation & Support, ALSO REFER TO APPENDIX 2.



REFER TO FIGURE 6 AND APPENDIX 2 FOR ABBREVIATIONS USED IN TEXT BOXES.

CHAPTER SEVEN: CONCLUSION

This thesis assesses characteristics of ICZM and other frameworks as a basis for analysing coastal management in New Zealand. The Hauraki Gulf case study provides examples of existing practice and is used to make the analysis determine whether efficient, equitable and effective policy and environmental outcomes are occurring amongst different organisations and stakeholders in the management of the Hauraki Gulf.

Hauraki Gulf Conclusions

Conclusions about the interviews are presented at the end of Chapter Five. There are also conclusions made from the analysis presented in Chapter Six and condensed below. Theoretical and interview material has been reviewed for what is needed to achieve ICZM for the Hauraki Gulf. Issue relationships between target groups, innovating organisations, and interactive settings are determined. Issues that are identified but not covered in theoretical review relate to clarifying and interpreting roles and promoting a culture change. Clarification and interpretation require greater two-way involvement of regulatory, iwi and stakeholder groups. Issues in common between theory and practice relate to the importance of relationship building and education. Organisational capacity building to facilitate decision making at the smallest practical level to mitigate uncertainty is not adequately practised. Finally, there are issues resolved by theory but problematic for application to the Hauraki Gulf. These could include patch politics (across local government), loss of willing community involvement, and the bureaucracy evident in interactions between central, regional, and others concerned with resource management in the Gulf. Attention should be focussed on encouraging networks and using advocacy and other non-statutory methods to create workable outcomes benefiting the environment. The process framework discussed above will assist all groups to know what can be done to enhance their input for improving environmental outcomes. The first iteration of the framework and recommendations has found similar directions taken by this research and a draft bill for a Hauraki Gulf marine park.

Research Aims, Objectives, & Questions

The research has three objectives. Firstly, theoretical and practical material from New Zealand and overseas is reviewed. Broader concepts underpinning ICZM theory include

adaptive management, ecosystem management, systems theory and integrated environmental management. These concepts have pushed the evolution of coastal management from a sectoral stance where management considered impacts and uses in isolation to a wider system able to recognise and provide for differing social, cultural, economic and environmental viewpoints. The mechanisms for doing so are linked to a discussion of ICZM issues, processes, process components (governance, community and stakeholder empowerment, research, monitoring and information management), its implementation and evaluation (refer Chapter Two).

To meet objective 2 the critical attributes listed on pages 27-28 are used in an analysis of the New Zealand institutional context described for the Hauraki Gulf in Chapter Four. Assessment of the current state of ICZM in the Hauraki Gulf included identification of target groups, innovating organisations and interactive settings for change based on criteria developed from the ICZM theoretical attributes. Interviews with key stakeholders are used to identify concerns for coastal management in the Hauraki Gulf (Chapter Five). An Action Research methodology used to achieve objective 2 (Chapter Three) was a necessary approach for developing ICZM. It is particularly applicable for coastal management in New Zealand where both “bottom up” and “top down” management initiatives are operating.

Objective 3 has been achieved by applying theoretical and practical knowledge to develop an ICZM framework that could improve upon existing New Zealand coastal management practices and specifically the Hauraki Gulf (Chapter Six). The new framework would assist practitioners and stakeholders interested in applying integrated coastal management to the New Zealand context. Ongoing review by participants is required to gain the necessary approval and buy in for a framework.

The objectives are linked to four questions (Chapter One). Question one is linked to objective 1 and assessed methods or processes that influence the achievement of sustainable development goals. The overall finding was that the various methods (community empowerment, facilitation, education, negotiation) discussed in the literature were being adopted by practitioners, with some hesitation about their success as their implementation had a short history and had not been comprehensively evaluated. The second question linked to objective 2 concerns the degree of integration between organisations concerned with coastal management in the Hauraki Gulf. The

main finding is that there is a lack of integration and concern for integration amongst interested parties at all levels. This is particularly with regard to the links between commercial, non-regulatory and Iwi interests shared with regional government. The third and fourth questions relating to objective 3 ask about the positive and negative influences of legislation and existing relationships between organisations. These have been outlined in the analysis with the main finding being that although legislatively, the present system “ticks along”, there is a need for clarification about roles and to expand integrated management through the Courts to bring in Iwi, stakeholder and previously untested methods (e.g. pre-hearing meetings). This has led to efficiencies in processes (“savings on lawyers”) influenced by non-statutory relationship building. The main finding is that while there is positive co-ordination (e.g. Regional Councils and Department of Conservation), there is a need for more understanding about how to achieve joint goals shared for similar organisational levels.

Further Research

Significant scope exists for further research into the application of ICZM within current and proposed Hauraki Gulf coastal management structures.

The action research methodology has not been sufficiently tested to confirm or dispute its utility in building participatory viewpoints for coastal resource management. Further research could be useful in bringing together agencies and stakeholders to develop collective agreements such as processes developed by Raymond (1996).

Theoretical concepts providing the basis for ICZM practices are often unfamiliar to groups and organisations involved at the field and grass roots level of integrated management practice implementation¹. Theory and concepts require expression and translation into an every day sense that has meaning for the management actions of iwi, stakeholders, and communities. Further research would be useful to improve the communication of relevant theory by assessing management for good practice or to understand potential barriers.

It is beyond the scope of this thesis to objectively assess the relative weighting of tangata whenua values in determining ICZM research. Further research is required to

¹ “Jargon” was a complaint about the research expressed by an NGO respondent.

determine what multidisciplinary and bicultural social values should be incorporated into ICZM approaches for New Zealand and the decision-making processes to be used. Processes may vary considerably across Iwi boundaries.

Some interview respondents suggested that ICZM is most effective under local and smaller scales than as a district or bio-regional approach. Theorists do not necessarily support this and evaluative research about the use of differently scaled stakeholder involvement processes and methods could provide guidance for achieving the successful translation of decision-making processes across boundaries and scales. Further research could also contribute to this debate by assessing the different characteristics of local and regional participative processes in order to evaluate and compare different approaches (e.g. contrast Beach Care with joint committees or regional monitoring strategies) in terms of developing better integration.

Studies of ICZM usually emphasise vertical integration at the expense of horizontal integration. In this research, it has been noted that there are several groups of agencies, iwi and stakeholders with inadequate linkages (e.g. between territorial local authorities, non-regulatory stakeholders and regional government). Future studies could investigate the benefit of improving horizontal integration using an approach which builds on participant understanding of each other's different values and needs.

Reflections on the Research

ICZM is a comprehensive process for acknowledging and including many different sets of values relevant to the coastal environment and it's inhabitants. A thesis modelling ICZM within this context should use a research process that incorporates exploration of new knowledge. Both ICZM and Action Research are ongoing and iterative concepts. Attempting to describe this project has been an ongoing learning process. This type of research style emphasises people outcomes in relation to the environment because it is only by connecting issues to people that they can understand the environment.

Conclusion

A thesis investigating the effectiveness of ICZM in the Hauraki Gulf and developing a framework for management based on an action research approach has been completed. However it is not complete and will be an ongoing iterative process as management

adjusts to the changing environment and the changing expectations of coastal resource users and developers. Further research is needed.

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APPENDIX 1: GLOSSARY OF TERMS

Anthropocentric: Meaning human centred

Discriminants: Criteria to measure the complementary nature of a range of existing and possible coastal uses for communities and local authorities to choose alternate resource uses, and resolving conflicting uses. Discriminants relate to ecosystem integrity, economic efficiency, and social integrity.

Innovating Organisation: An innovating organisation is defined as any target group discussed in this research that (1) requires the listed activities (Appendix 3), or (2) is perceived to be using the listed activities to be innovative in its interactions concerning the Hauraki Gulf coastal environment.

Interactive Setting: The interactive setting is defined as any real space, time or participatory process that involves the target groups in the context of this research and the Hauraki Gulf (Appendix 3).

Taonga: Means treasure.

Target Group: A target group (Appendix 3) is defined as any individual or collective interest that is influenced or influences interactions in the Hauraki Gulf coastal environment including the interview respondents and Iwi/ tangata whenua groups (e.g. Hauraki Maori Trust Board).

Social dilemma: Where a person who contributes to the good of the community receives fewer personal benefits than a person who does not contribute, and all group members receive more personal if they all contribute than if none, or only some of the group members contribute” (Crance & Drapper, 1996:176).

Whanaungatanga: relationship, kinship, bonds.

APPENDIX 2: ACRONYMS

ACB: Auckland Conservation Board.
ACC: Auckland City Council.
ARC: Auckland Regional Council.
ARRF: Auckland Recreational Fishers.
ASCV: Area of Significant Conservation Value
CEO: Chief Executive Officer
CRI: Coastal Resources Index
DOC: Department of Conservation.
EW: Environment Waikato.
FA: Fisheries Act 1996
IUCN: International Union For Conservation of Nature and Nature Reserves.
HDC: Hauraki District Council.
HGF: Hauraki Gulf Forum.
LA: Local Authorities (Both regional councils and territorial authorities)
LFA: Leigh Fisherman's Association
LG: Local Government
MAF: Ministry of Agriculture & Fisheries.
MCC: Manukau City Council.
MFISH: Ministry of Fisheries.
MFE: Ministry for Environment.
MSA: Maritime Safety Authority.
NSCC: North Shore City Council.
PCFE: Parliamentary Commissioner for the Environment
POA: Ports of Auckland.
QMS: Quota Management System.
RAMSAR: Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971.
RC: Regional Council
RDC: Rodney District Council.
RMA: Resource Management Act 1991
SOE: State of Environment.
TA: Territorial Authority
TCDC: Thames Corromandel District Council.
WCC: Waitakere City Council.

APPENDIX 3: SUMMARY OF ANALYTICAL FRAMEWORK

TOPIC	CRITERIA	HAURAKI ELEMENT	PROCESS STEP
Understanding ICM	Knowledge & Compatibility	TG: 1, 2, 3, 4, 5, 6	<i>PROBLEM DEFINITION</i>
		IO: LA, SB, SG	
		IS: I, IV	
Approach to Planning & Goals	Objectives and Consultation	TG: 2, 3, 6	<i>FORMULATION</i>
		IO: LC, SC, SH, SF	
		IS: II, III, VI	
Theoretical Concepts	Translation	TG: 3, 4, 5, 6	<i>PROBLEM DEFINITION</i>
		IO: SE, SF, SG	
		IS: I, III, IV	
Response to Change	Adaptive versus Reactive	TG: 3, 6	<i>ASSESSMENT & ANALYSIS</i>
		IO: LA, SC, SF	
		IS: III	
Achievement Processes	Uncertainty	TG: 2, 4, 5	<i>ADOPTION</i>
		IO: LA, LC, LF	
		IS: VI	
Networks & Structures	Effective Links	TG: 1, 2, 3, 4, 5, 6	<i>IMPLEMENTATION,</i>
		IO: LA, SA, LI, SE	
		IS: III, V	
Promotion of Integrated Management Practices	Education	TG: 2, 6	
		IO: SA, SB, LD	
		IS: III, IV, V	
Performance & Feedback Mechanisms	Assessment Techniques	TG: 2, 6	<i>MONITORING & EVALUATION</i>
		IO: SC, SD, SE, LH	
		IS: II, LH	
Information Needs	Database / Baseline	TG: 2, 4, 5, 6	<i>ISSUES & OPTIONS</i>
		IO: SA, SC, LH, SH	
		IS: III, V, VI	
Institutional Arrangements	Flexibility & Involvement	TG: 3, 6	
		IO: LA, SB, SG	
		IS: III, IV	
Legislative Support	Collective Context	TG: 3, 4, 6	
		IO: SA, LB, SB	
		IS: III	
Participation & Support	Barriers & Incentives	TG: 2, 3, 4, 5, 6	<i>MONITORING & EVALUATION</i>
		IO: SA, LC, SG	
		IS: I, III, VI	

Refer to Tables below for an explanation of the codes.

Code Tables used in Summary Table

TARGET GROUP

<i>ORGANISATION</i>	<i>CODE</i>
Central Government	1
Regulatory / Local authority	2
Tangata whenua & Iwi	3
Private Commercial	4
Non Regulatory Stakeholder Groups	5
Local Community Based & General Public	6

INNOVATING ORGANISATION

<i>ACTIVITY</i>	<i>CODE</i>	
Building Relationships, Partnerships And Team Approaches	LA	SA
Developing Education, Best Practice, And Advocacy Roles	LB	SB
Negotiation, Conflict Resolution	LC	SC
Evaluation And Review With Accountability Principle	LD	SD
Financial Prioritisation With Cost Effectiveness Assessment	LE	SE
Adaptive Stepped Improvement To Recognise Uncertainty By Performance Indicators.	LF	SF
Encouraging Holistic Environmental Outcomes	LG	SG
Clear, Consistent, Relevant Information & Research	LH	SH
Participation and Management at Lowest Practical Level	LI	SI

INTERACTION SETTING

<i>ENVIRONMENT</i>	<i>CODE</i>
Land, coast, sea, catchment	I
Policy documents	II
Forums & Strategies	III
Land, coast, beach care groups, and community meetings	IV
Networks	V
Submission & resource consent processes	VI

APPENDIX 4: INTERVIEW PARTICIPANTS

<i>NAME</i>	<i>ORGANISATION</i>	<i>POSITION</i>
Kirsty Lewin	Ministry of the Environment	Policy Analyst
Paul Irving	Maritime Safety Authority	Scientific and Strategic Adviser
Stan Crothers	Ministry of Fisheries	Manager Compliance
Phillip Barrett	Department of Conservation, Hamilton	
Jason Roxburgh	Department of Conservation, Thames	
Hugh Leersynder	Auckland Regional Council	Manager
Blair Dickie	Waikato Regional Council	Programme Manager: Policy
Glenys Millar	Auckland City Council	Planner/ Policy Analyst
Carolynne Stone	Waitakere City Council	Councillor
Carol Bergquist	North Shore City Council	Conservation Officer
Graham Smitheram	Manukau City Council	Environmental Policy Planner
Rob Bates	Rodney District Council	Policy Planner
Mike Maguire	Hauraki District Council	Planning & Environmental Services Manager
Phil Surman	Thames Coromandel District Council	Councillor
David Hill	Auckland Conservation Board	Board Member
Geoff Veesey	Ports of Auckland	Chief Executive Officer
Tom Hollings		Consultant
Barry Torkington	Leigh Fisherman's Association	Spokesperson
Jan Riddick	Royal Forest and Bird Protection Society	Branch Secretary
Bernie Ward	Auckland Recreational Fishers Association	Branch President

APPENDIX 5: INTRODUCTION LETTER OUTLINE

Nicholas Cooper

C/o Department of Resource & Environmental Planning

Massey University

Private Bag 11222

Palmerston North 5301

N.R.Cooper@massey.ac.nz

27 April 1998

Dear _____,

I am conducting postgraduate research into coastal management of the Hauraki Gulf region. The thesis is designed to study the effectiveness of policy coordination and implementation between various regulatory and non-regulatory agencies that operate in the Gulf. To facilitate this I am hoping to arrange initial and follow up interviews with significant stakeholders associated with policy development for the Gulf environment. The first interview would focus on issues and concerns of individuals and groups about factors that could assist or hinder the integrated management of the Hauraki Gulf. The second interview would include presentation of a potential framework specifically tailored for coastal management of the Gulf derived from the first series of interviews, theoretical literature, and the current legislative environment.

Each discussion would take approximately 30 to 60 minutes and would be recorded on cassette for transcription if this would be acceptable to you. The information gained will be used for the purpose of research only, and would remain confidential to my supervisor and myself, unless approved by you for comment and review by other participants.

I appreciate there are many constraints on your time but would value the participation to investigate the benefits of this research to your organisation. If a suitable time and date could be arranged the initial interview would be conducted between May and June with a follow up interview to occur in early to mid September.

Thank you for your consideration. Please find the research summary enclosed and contact me if you have any other queries or questions.

Yours sincerely,

Nicholas Cooper.

APPENDIX 6: INTERVIEW QUESTIONS

The central theme is to determine what are the factors that help or hinder the practice of integrated management in the coastal environment for your organisation.

The interview is semi-structured to encourage informality and allow full participation and comfort with the process. It will take approximately one hour to complete.

The questions give structure to guide the interview but are not a limit if you wish to discuss other related matters.

Some topic headings, questions, and keywords may not apply due to the broad coverage of stakeholder groups for this research.

All of the information given will be treated in confidence and is for the purposes of research only.

1 UNDERSTANDING OF INTEGRATED COASTAL MANAGEMENT

What do you believe integrated coastal management [ICM] is?

Does it offer an overall benefit or cost to your organisation?

Is it a co-ordinating mechanism for stakeholder activities that affect sustainability of the coastal environment?

Is it about managing for multiple-use?

Should societal expectations influence it?

Do your 'clients' know what it is?

2 APPROACH TO PLANNING AND GOALS

Agreement with the Plans and Management goals/objectives for the coastal environment?

Do these account for differing and/or competing viewpoints?

Utilisation of a multi discipline perspective?

Are your organisations views reflected in planning and management goals/objectives?

3 THEORETICAL CONCEPTS

Understanding and applying these terms for the coastal environment?

- ecosystem management
- adaptive management
- stewardship and/or kaitiaki management
- Others?

Are these terms useful in meeting the goals or objectives of your organisation? What is their best usage?

Do these enhance your ability to meet organisational objectives?

Do the use of these terms improve the practice of integrated coastal management?

4 RESPONSE TO CHANGE

Awareness of changing environmental, economic, or socio-cultural conditions?

Awareness of their influence?

Kind of processes to respond to change [either in the long or short term]?

Does integrated coastal management offer any scope to resolve issues affecting your objectives that are beyond the focus of core activities?

Examples [Of ability to respond to change]

5 ACHIEVEMENT PROCESSES

Deciding on methods, mechanisms, or tools to achieve goals involving coastal environment?

Older established or newer [pilot, innovative, or experimental] approaches?

Examples?

6 NETWORKS AND STRUCTURES

Type of networks or structures established to ensure your goals are met?

Utility of informal & formal policy / operational types to achieve your goals?

Why do these work? Why not other systems?

Could another organisation [not directly involved] help in resolving issues or problems affecting yours?

Examples

7 PROMOTION OF INTEGRATED MANAGEMENT PRACTICES

Methods to explain and promote practices and approaches that encourage integrated coastal management?

Examples [Education? knowledge and/or skill sharing? staff training and/or team building? other?]

What other interest groups or organisations do you work with to promote integrated management?

Do you provide constituent support building between organisations or associated groups?

Awareness of role's, functions and processes of other coastally orientated organisations?

Perceptions of other organisations and/or groups knowledge about integrated coastal management?

8 PERFORMANCE AND FEEDBACK MECHANISMS

What indicators and processes are needed to measure the effectiveness of change from non-integrated to integrated management in the coastal environment?

Is there a difference between-

- the general and specific levels?
- performance of policy or operational outcomes?
- environment or policy outcomes?

Is your organisation involved in determining indicators or reviewing results?

9 INFORMATION NEEDS

What type of information is needed for your organisation to meet its objectives and achieve integration in the coastal environment?

Does the acquisition process promote a utility based on information's direct relation to an issue or for improving the qualitative understanding in meeting your objectives in the coastal environment? [So called triangulation of information]

Is the information distributed or exchanged between your organisation and other stakeholder groups adequate to achieve your objectives and for the needs of effective integrated coastal management?

Can information exchange for achieving integrated coastal management be affected by restrictions based on ethical or commercial considerations? [equity of information flow]?

10 INSTITUTIONAL ARRANGEMENTS

Are existing institutional arrangements meeting your organisations objectives in the coastal environment? Why or why not?

Is more or less devolution and flexibility required to effect integrated coastal management and meet your organisations objectives?

Does a multiple agency regulatory perspective meet your objectives for the coastal environment?

Do institutional arrangements assist your objectives based on a;

- (a) Required level of involvement
- (b) Actual level of involvement

As an agency, iwi and/or stakeholder group in the coastal environment.

11 LEGISLATIVE SUPPORT

Does your organisation regard a strategic vision as important for meeting its objectives and to achieve integrated coastal management?

Is legislation providing for your organisation to participate in developing an inclusive strategic vision for directing coastal uses and activities? Or does it prevent your organisation from doing so?

Is current legislation assisting your organisation to meet objectives relevant to integrated coastal management?

12 MEASURING SUPPORT & PARTICIPATION

Does your organisation support methods and mechanisms used for achieving integrated coastal management?

What incentives exist for non-regulatory stakeholders to develop objectives based on integrated coastal management?

Is a political process involving negotiation a necessary and acceptable function of integrated management for meeting your organisations objectives in the coastal environment?

Can an increased role for local resource management in the coastal environment create participation and achieve support for integrated coastal management?

Will integrated coastal management enable non-statutory methods to assist your organisation to gain agreement from other groups for meeting its objectives?

Does your organisation accept 'hierarchy' as a necessary condition for meeting collective objectives for the coastal environment?

APPENDIX 7: INTERVIEW TRANSCRIPT

Interview with Geoff Vazey [Ports of Auckland]

1 Understanding of Integrated Coastal Management

Nick-

What do you think it means and how do you think it applies to your organisation?

Geoff-

I guess integrated coastal management is taking into consideration all the vested interests, business, the marine side of things, iwi....all the wide and varied array.

Nick-

That's meeting social expectations and do you think it has regard to multi interests like shipping, with fisheries...

Geoff-

To me fisheries is shipping, it's all just part of shipping. For us its occupation of the seabed and its occupation of the seabed and its occupation of some water space. The ability to get commercial ships from the ocean to the port without interference safely.

2 APPROACHES TO PLANNING AND GOALS

Nick-

Does the Ports of Auckland agree with how documents like such as the regional policy statement, the conservation management strategy, and the proposed regional coastal plan have identified issues in the coastal environment and have they incorporated objectives meeting the Ports of Auckland?

Geoff-

Some of the authorities talk to us before coming up with a plan. Some of them just come up with a plan, and go into bat. Obviously we prefer to be in on the formulation of an idea, rather than submitting against a plan. Every plan that's ever come up since I've been in this business nine years we have had to submit on because they have not properly considered us, which we find staggering in that 66% of all New Zealand imports come in through here and the port and city grow together. So you get a political flavour to a lot of these planning things which have a lot of nice things in them but don't make economic sense and we've often got to bring an economic balance to....Often the draft deeds are somewhat one sided in their point of view. Non-commercial more green, and then business has to go into bat to bring about a balance otherwise Auckland won't be here.

Nick-

Do you think you can achieve a balance between development and conservation interests?

Geoff-

We tend to but we've often got to use legal devices to get there. It should be possible to get there without using legal devices. Because often the political element listen more to the moaning rather than our story which is a bit boring. It's factual, it's boring, it's good for Auckland but it's boring.

Nick-

So that's getting close to court cases involved...?

Geoff-

Yes we've had to use lawyers to make submissions and do all kinds of weird and wonderful stuff and take councils to court....

Nick-

Within your organisation do you consider issues that aren't so concerned with your productivity such as conservation?

Geoff-

Just help me with what you mean by conservation?

Nick-

It could be having regard to preserving the working environment around the Ports of Auckland say the harbour waters trying to maintain water quality...?

Geoff-

Very important to us and we do a hell of a lot about it. The Port in fact is hardly a polluter at all. One of the biggest polluters of the waters is the city, and it's a problem for us. Because it has sixteen pipes that come out from the land in amongst our wharves, and all the storm water comes down and drops all this crap into our water space and lands in the seabed and the area that's assigned to us. We didn't put it there, the city put it there, and the city tell us you can't touch it, its all crappy and dirty and it doesn't satisfy the rules. But they're in fact putting it there. So we're having this enormous battle with them, and we've scientifically proved the problem is theirs not ours and then they won't let us dispose of the dredging and all the rest of it. We've been working with them avidly and have finally in the last twelve months since I came on the Chief Exec got some admittance that the problem is in fact theirs. They are now committed to spending some millions of dollars in fixing some of the problems. It's not easy.

Nick-

Do you think there is scope for the Ports of Auckland to co-ordinate with Auckland City Council and working to solve the storm water problem, in the way the drain comes out.

Geoff-

We'd like to see it solved, and we have been taking a pragmatic approach rather than a legal one which strictly speaking when the licenses reach those storm water outflow end we can legally object, if you like stick a cork in each one, practically the waters still going to flow down hill, theirs nothing we can do about it. We've been working pragmatically with them, to come up with some pictures over time that will see some stepped improvement, rather than dreaming of a one day total fix. It's going to happen slowly over time.

3 THEORETICAL CONCEPTS

Nick-

I know Ports of Auckland was looking to expand further across the harbour. Pollen Island was proposed as a marine reserve or had some designation, and the Ports of Auckland objected. When you look at these at concepts of ecosystem management, adaptive management and possibly others, do you think they have any application in the environment around that the Ports of Auckland operates in and would they useful to the Ports of Auckland for meeting its objectives?

Geoff-

It's really outside my statutory responsibility. I have to make the Port work well, and the best I can do for the community is to have a successful Port. What happens outside the environment that is my responsibility is for somebody else. We won't develop Pollen island as a Port anymore, that's committed. These things are all matters that happen around us but there's no way you could do any of those things within our legal territory, our legal territory being are not things to pick up land title too---- RMA 384a [Right of port companies to occupy coastal marine area] which is the water space we've got entitlement

too. You couldn't do these things in that space, but it's only a space which is an envelope around the wharves we've got exclusive right to use of that water space obviously for berthing and unberthing ships.

Nick-

Within this space that you've got, it's part of a larger package because it's a lot of interaction between the port space and outside spaces, in terms of water flows and things. Does each sector mitigate the practices it does have control over, to improve the overall environment?

Geoff-

Your making assumptions we're polluting the water we're in....

Nick-

You have some output effects that would be averse in terms of...

Geoff-

Like what?

Nick-

Could be drainage of machinery oils....?

Geoff-

We capture it all and get it treated.

Just like we have a safety management system we have an environmental management system. I chair a steering committee for the Port that looks at all the environmental compliance that we need to abide by, and we not only do that but we do far more than what's legally necessary. Each business unit has taskforces and committees etc., and then they all report back to the steering committee, and we get third parties to environmentally audit us, to go through and make all the changes, etc. it's big business.

4 RESPONSES TO CHANGE

Nick-

How the Ports of Auckland used processes to respond to the change in legislation to the RMA, or factors such as increasing amounts of imported cargo coming in?

Geoff-

What do you mean.... Well there are increasing volumes of cargo coming in but how does that link in here.

Nick-

I guess you might have to work in more closely.... Notify the maritime safety authority to improve communication links, so there's not going to be congestion of ships getting close to each other.

Geoff-

It's something we do our responsibility and not the maritime safety authority. That's just a safety situation, plain and factual.

Nick-

What about keeping the channels dredged, to a certain width, have you had to increase....

Geoff-

We don't dredge them the channels, they're all naturally deep enough. The geographic configuration is such that it's quite safe for ships to pass each other and even the configuration is even if you had a ship founder here, holed or sinking, you would have time to steer it off the channel before it touched bottom, and not interfere with the business.

Nick-

What about such areas because you've got an urban population that is relatively close to the Ports of Auckland, I'm thinking of Parnell, people are becoming more politically up front in objecting to things happening...?

Geoff-

Noise is a big issue for Ports throughout the country. So what we do in this whole area of question 4 "Response to Change", there's two things we do. Firstly we monitor any proposed legislative change, and if we think it's inappropriate we'll make submissions to indicate we want it changed. Secondly we have a business style where we work with parties rather than use lawyers to try and change things. So on noise, reporting to the environmental steering committee is a noise committee and it is responsible for making sure we're legal and better than legal on noise through out the Port. The Port makes two types of noise. It's peculiar for a seaport. It makes a humdrum all the time, if you open a window you will hear a noise all the time a lot of it's repacking containers

Nick-

Combined background

Geoff-

The other type of noise we make is infrequent penetrating noises. It might be the sound of a machine going backwards, or the beepers going backward and those sort of things can keep people awake. What we are doing first off, is identifying all the penetrating noises and removing them, bells for rail crossing, trains that move backward and forward with sirens. We have liaison groups with local residents, and we meet regularly with the resident we get them to help us identify these noises and we remove them. That's having far more benefits than the earlier regime that just chucked lawyers at each other, the lawyers got rich, but the noise didn't go away because the noise is not illegal. Now they're actually getting actual benefits because the thing that's annoying them is getting fixed even though it is quite legal.

Nick-

Do you think this focus of integrated management is improving helping your organisation to resolve issues?

Geoff-

Definitely.

5 ACHIEVEMENT PROCESSES

Nick-

You just spoke about consultative committees with residents, are there other methods, mechanisms, tools you would use to help achieve your objectives?

Geoff-

We have a hotline on noise we publicise. We sent flyers around the local letterboxes to let them know what it is. Where they can ring and we've got a policy on exactly what happens when we receive a call, who does what, and we've got to get back to the person within the hour with a fix, etc.

Nick-

Have these been new approaches or have adapted these from older methods?

Geoff-

These are new put in the last two years.

Nick-

Has that been from looking at similar organisations?

Geoff-

No we invented it ourselves.

We're running a big business immediately adjacent the CBD and there's also a lot of residents, so we want to be a good neighbour. Put yourself in the head of the neighbour and say what would you want that business to do, and act accordingly.

Nick-

With the Ports of Auckland legal property title, with the buildings they have, do they rent out commercial property?

Geoff-

Yes, we've got big property holdings.

Nick-

They all have to conform to building code and with the fire regs?

Geoff-

Yes. We've gone through and made sure there's no asbestos and PCB's and stuff like that.

Nick-

Do you think integrated management has increased the costs to your organisation?

Geoff-

We would spend less on lawyers than we used to, but we'd be incorporating more in house executive time on doing these things, so it's pretty hard to measure. But the integrated approach, talking it through rather than sending lawyers at each other I think is more effective. Sometimes with lawyers, you win in law, but you ain't won a hell of a lot, the problem still there, and everyone is still pissed off with you. Whereas we're trying to achieve the people who are complaining, used to complain ah saying it's a whole lot better now --.

Nick-

When I talk about integrated coastal management I mean bringing in various parties, exploring the options, rather than saying this is the way we're going to do it and looking at alternatives. It's bringing in a wider set of information than what you had previously regarded....

Geoff-

It seems to be more effective, it takes a hell of a lot of managing. It takes an inordinate amount of time, especially with for instance, the Iwi. We have to consult with 8 different Iwi. A few years ago it was 5. Under the law, that list will only get bigger, not smaller, because no Iwi are going to cross themselves off the list. You get them coming from all over the place saying put up my hand I need to be included as well.

Nick-

What about them working through the process of the Waitangi Tribunal establishing who actually....

Geoff-

All of them have claims to different bits and pieces throughout the district. None of them will concede to not being consulted because it might prejudice the claim.

Nick-

You don't see them the Waitangi Tribunal adjudicating to say that this tribe had a claim, but really it lost it so...

Geoff-

That's the theory but it never happens. Auckland --- has a patchwork quilt approach to regional - . Auckland's Waitangi claim won't be heard until the year 2000. So there are one or two years where we have to consult with 8 groups over anything. Even if it's a \$10 dollar job, let alone Burgess at a purchase worth of \$120 million. You end up with colossal costs in a company like this. At any one time I average six executives just dealing with legislation compliance in this business. That costs a couple of million bucks a year.

Nick-

In terms of what they're being charged out per day?

Geoff-

We haven't got a piece of paper to start Ferguson expansion yet. The need for it is like night follows day. We spent over two million dollars over three years and we still haven't got a piece of paper signed yet.

Nick-

For the Ferguson expansion, do you look at that as a case of long term planning but making all the parties aware of it five years in advance?

Geoff-

Ten years in advance. Laid out in 1989 we worked out with Auckland Regional Council and Auckland City Council all three key people agreed on the port plan and what would happen. Under the law, any for example Iceland could come down and object to it. Then we got resource consents. We didn't appeal any part of the conditions, seven people appealed it, six of them pulled out, one party took us to the Environment Court, three weeks, it cost hundreds of thousands of dollars, and my opinion it was absolutely frivolous. The guy was a barrister, and it was pathetic.

Nick-

Was he stymieing the process?

Geoff-

In my opinion he was just playing for time.

6 NETWORKS AND STRUCTURES

Nick-

These are formal or informal ways of achieving policy and operational objectives. They might be relationship building between your organisation and others?

Geoff-

Our structure on these sorts of things safety, environmental sorts of things. They report to the board quarterly, assuring them of full compliance and non-compliance we've got to put a report in. I chair a steering committee, which will include all the managers who pick up responsibilities in this area and they each have a committee in their business area and do all their things. So that's how we do it internally. Then in terms of the third parties we do it on as required basis. Take for instance one classic in your area would be the dredging for Onehunga. Desirous to disposing of the dredging in the Manukau harbour,

tangata whenua in particular find it offensive because it sends the food ---. So we set up a team incorporating Green Peace, Maruia, Manukau Harbour Protection Society, etc. and worked away for three years on that, and came up with proposed alternatives. In parallel with that, with tangata whenua because they won't go to those sorts of things. Each of these you've just got to work out the way to handle each specific one.

Nick-

In terms of achieving objectives, do you think people are approachable when you broker proposals at an informal level, and work up to things? People made comfortable about what you're doing, how you see things, and how alternatives can be arranged?

Geoff-

There's often no time for that sort of thing. It's better if you can quietly informally work up to it and get the buy in rather than jamming it down somebody's throat. I guess its working together rather than trying to do it unilaterally seems to be more successful.

Nick-

Would there be any links between within your organisation, say members of your departments the professional people with other professional people in regulatory agencies or?

Geoff-

Yes because your dealing with a whole lot of people in Department of Conservation, the planners in regional and city council, government departments, we've all got our networks. It's all organised as a programme. I meet with the chief executive of the regional council once every three months, with the chief executive of the city council once every three months. From time to time, I will get all my executives and he or she from the Auckland Regional Council will get hers executives and we'll get together for half a day to talk about what's going down the tube.

Nick-

What I'm talking about, you would have heard of the Hauraki Gulf Forum, theirs a council officer or technical subcommittee which is a grouping of the planning and resource management professionals, do you think there would be any benefit for your organisation to have people to have attached or have people familiar with that?

Geoff-

The difficulty with those things is that they tend to get political. We stay away from the political and try and live in the real world, rather than the dream world. We're one of the parties that has to make money to survive, we don't have the glory of spending it, which is the politicians world.

7 PROMOTION OF INTEGRATED MANAGEMENT PRACTICES

Nick-

The methods used to explain and promote practices and approaches that encourage integrated management we've already talked about...

Geoff-

My predecessor was more legal mow environmental management down shoot at the gate. I'm more what I've explained, work with the other parties, you don't have to love them, but they've got their own rights you've got to work with them. You've got to manage these things into the way you manage business.

Nick-

Is that attitude reflected through the different departments of your organisation that would have contact with other groups?

Geoff-

It better be. I think so.

Nick-

Do you have practices like staff training?

Geoff-

It's not something that gets down to that level. I've got 582 permanent staff and 100 odd casuals on any day. But only a small band of them are dealing with this sort of stuff. You're in the executive world here. You take on people in your team who have got the skills to communicate with people. In any executive team and it's healthy there will be all sorts of make up of people. So you use the people who can be most effective to do these sorts of things.

Nick-

Do the people in your organisation who have contact with agencies do they have a good understanding of the roles and functions of these other organisations?

Geoff-

I think so.

Nick-

They have an understanding of what the Department of Conservation or Auckland Regional Council would be likely to object to?

Geoff-

Yes.

8 PERFORMANCE & FEEDBACK MECHANISMS

Nick-

Do you have ways of evaluating the effectiveness in terms of achieving objectives that are effective?

Geoff-

We don't do comparisons with our effectiveness compared with what you said before called integrated. It's the Board monitoring me in my performance --. But we don't have any formal process of measuring that. We set our objectives, what we have to achieve and we've got environmental objectives ---. I think it would be fair to say we are doing it better in that regard under the style we're doing now compared to the previous style.

Nick-

Is it fair to compare across to other Port companies in New Zealand in the way that they've handled environmental management?

Geoff-

I don't know how they handle it, haven't a clue, they're our competitors. We're fighting them. I hope they're ballsing it up.

Nick-

Have you put in any submissions talking about indicators to, or has the Auckland Regional Council or other agencies approached you about developing indicators?

Geoff-

On the way we manage?

Nick-

Yes. Or..

Geoff-

No. We get third parties to audit us and then we run through and set objectives on how to fix how many of those things. But we don't circulate or publicise that. It's just how we run the business.

The only area where we get into monitoring is when you're doing your resource consent and it's part of the conditions for a monitoring requirement ---- I think it costs \$500, 000 per year to monitor forever.

Nick-

For dredging as well?

Geoff-

Yes that's got quite stringent monitoring requirements.

Nick-

For that kind of environmental information you think you have a system that achieves outcomes in terms of knowing what's going on below the surface?

Geoff-

I haven't thought of it that way. You go in lodge your consent and comes back with additional conditions and monitoring requirements, and you monitor. I'm not an expert in that degree of science. Presumably those deciding on the consent and putting conditions on the consent know what the hell they're talking about.

Nick-

Who would be doing the monitoring, is it the regional council or would you contract out to a private organisation?

Geoff-

The regional council sets the parameters, the zinc content cannot be more than so many percent of something. Then we get a third party scientific outfit to do the monitoring for us, send the data to Auckland Regional Council and they say yay or nay.

Nick-

Do you seek to put it up to the level of the monitoring or ?

Geoff-

Well you can't do less.

You stand to forfeit your consent if you do.

Nick-

What about anticipating more precautionary approaches?

Geoff-

Like what?

Nick-

Say there was more, in the future it was regarded it was an insufficient level it was taken down to...

Geoff-

I'm not sure how that side of the law works whether it be made more or less stringent.

Nick-

They can't be retrospective?

Geoff-

Probably not. I haven't had that circumstance.

9 INFORMATION NEEDS

Nick-

Does the kind of information that the Ports of Auckland generate, do you think that's sufficient to meet integrated management goals? Say the needs of Auckland Regional Council, or meeting your objectives about social satisfaction for people living next door to the Port?

Geoff-

It's a hard one. We send out a whole lot of public relations stuff to different – to try and get the realisation of what we are about and how well we do it included in the environmental awareness and compliance. But that's pretty hard to figure out what's read and what's understood. Because again our story is a boring one. We're a large successful company that's boring. People want to hear the shit, not the good news story.

Nick-

What about the degree of commercial sensitivity on this information? Making it not available to objectors?

Geoff-

We let quite a degree go, and of course being a publicly listed company on the stock exchange. There's two regulatory requirements. We are required to publish certain information, and also the requirement that we cannot publish certain information unless to everybody simultaneously because of the insider trading laws. You work within those parameters so your qualifying the messages your sending out their with hard data, keeping them from being simply subjective. Working within those constraints of the law.

Nick-

I was also wondering about employing people who control the shipping, pilots, do they have to be familiar with changes to the channels, do they have some degree of co-ordination with the Auckland Regional Council?

Geoff-

Yes quite in depth. The regional council are responsible for navigation. We're subcontracted to do that in the commercial channels. The Waitemata is quite simple because it's a very stable channel. The Manukau's quite different, take the Manukau bar, it swings around all over the place, it's shallow, deep. We monitor that, spend a hell of a lot of money monitoring that, got a full time guy out there, out on the South Head. He talks ships in and out each time they go through. The pilot needs to be well versed with all those parameters, that's part of piloting. When the tides coming in or out, which way the winds going and all the rest of it.

Nick-

What about monitoring or checking in terms of the ballast water situation, discharges?

Geoff-

What we did was that ballast water could become quite a serious problem but at the moment. First let me explain our philosophy. The problem with ballast water is it is possible to come up with all this fervour about how fucking horrible it is, but not based on any facts. So went to our ten largest clients and said what we are proposing to do is at our cost, is monitor your ballast water of all your ships that come in. All of them without exception said yes. The idea was rather than leave it in the figment of imagination mould, we would get some hard data. We test the ballast water of ships that come in here. We send the data to Hawthorne, and they analyse it, the information comes back to us and Auckland Regional Council simultaneously. All at our cost. So that we're building up a database of real information, not hey I think it might be that.

Nick-

What about instructions on where ship captains can discharge or take on water.

Geoff-

You hardly get any ballast water in this port because we're the largest import port in New Zealand and theirs more imports than exports. We're you get exposure to ballast water is just about all the other ports in New Zealand are 80% outbound. Take ships with a specific cargo like logs. Ship comes in empty, fills up with logs and goes. So if it's stable it comes in with ballast water. Here you don't get that. We don't have any bulk cargo going out. We only have bulk cargo going in. Gypsum for making wallboards, etc. Ballast water is a minor thing here it's not a technical requirements to do it.

Nick-

There's no need to have much of the water decontaminated?

Geoff-

No its other ports in New Zealand that circumstantially, technically that's how you keep ships afloat.

10 INSTITUTIONAL ARRANGEMENTS

Nick-

The institutional arrangements that you see for managing the Hauraki Gulf do you think that are adequate for meeting the Ports of Auckland's objectives?

Geoff-

We don't think we get a well heard.... We're the biggest operation by far on the Hauraki Gulf, commercial one, we don't get well heard. We normally have to tell planners, couldn't you just put something about the Port in your plan. We've had a little bit of success, but we shouldn't have to do that.

Nick-

This is particularly for the Auckland Regional Council proposed regional coastal plan?

Geoff-

Yes, in those particular areas. To have the real concerns we have to fight hard to get recognition in the plans that we exist.

Nick-

So you can see improvements using integrated management to get issues acknowledged earlier in the plan generation....?

Geoff-

If the senior people hear it, but if its just courtesy but they can say but oh you were involved. It's hardly worth being in it, you're just going through courtesy to flog you off.

11 LEGISLATIVE SUPPORT

Nick-

Part of integrated coastal management is providing strategic visions that are inclusive of all areas that use a coastal system. Would you agree that there isn't enough support for development as such and having your organisations input into creating documents in the New Zealand context such as the regional policy statement the proposed regional coastal plan?

Geoff-

There's been a change in the last few years, but it's been incredibly frustrating for a business this size and importance to Auckland, getting it recognised by the politicians ----those are who have to sign off, that we exist and are a necessary part of the Auckland economic framework. Some of them have gone out in the press and said, you shouldn't be there, close them down, have a beach, hang your geraniums everywhere, and all that can go to Tauranga. It can be pretty tough.

12 MEASURING SUPPORT & PARTICIPATION

Nick-

Do you think building support for your organisation can be by increasing co-ordination with agencies such as Department of Conservation, might be a way of achieving that?

Geoff-

It's an element in the whole thing in getting recognition and support as you say. It's not singular.

Nick-

Using integrated management the practices of bringing people to the table, getting issues aired before they become a problem could be a way of...

Geoff-

Yes, well it is a way we use.

APPENDIX 8 OTHER RELEVANT LEGISLATION FOR ICZM

Biosecurity Act 1993
Conservation Law Reform Act 1990
Continental Shelf Act 1964
Crown Mineral Act 1991
Foreshore and Seabed Endowment Revesting Act 1991
Environment Act 1986
Hazardous Substances and New Organisms Act 1996
Harbour Boards Dry Land Endowment Revesting Act 1991
Historic Places Act 1993
Local Government Act 1974
Maori Fisheries Act 1989
Marine Farming Act 1971
Marine Mammals Protection Act 1978
Marine Pollution Act 1974
Marine Reserves Act 1971
Maritime Transport Act 1994
National Parks Act 1980
Native Plants Protection Act 1934
New Zealand Walkways Act 1990
Queen Elisabeth the Second National Trust Act 1977
Reserves Act 1977
Soil Conservation and Rivers Control Act 1941
Territorial Sea and Exclusive Economic Zone Act 1977
Trade in Endangered Species Act 1989
Wildlife Act 1971
Wild Animal Control 1977

APPENDIX 9 MAPS

MAP ONE: HAURAKI GULF CATCHMENT & PROTECTED AREAS

MAP TWO: ADMINISTRATIVE BOUNDARIES & IWI LOCATIONS

KEY

MAP ONE

-  Catchment boundary
-  Proposed Hauraki Gulf Marine Park boundary
-  Protected Area

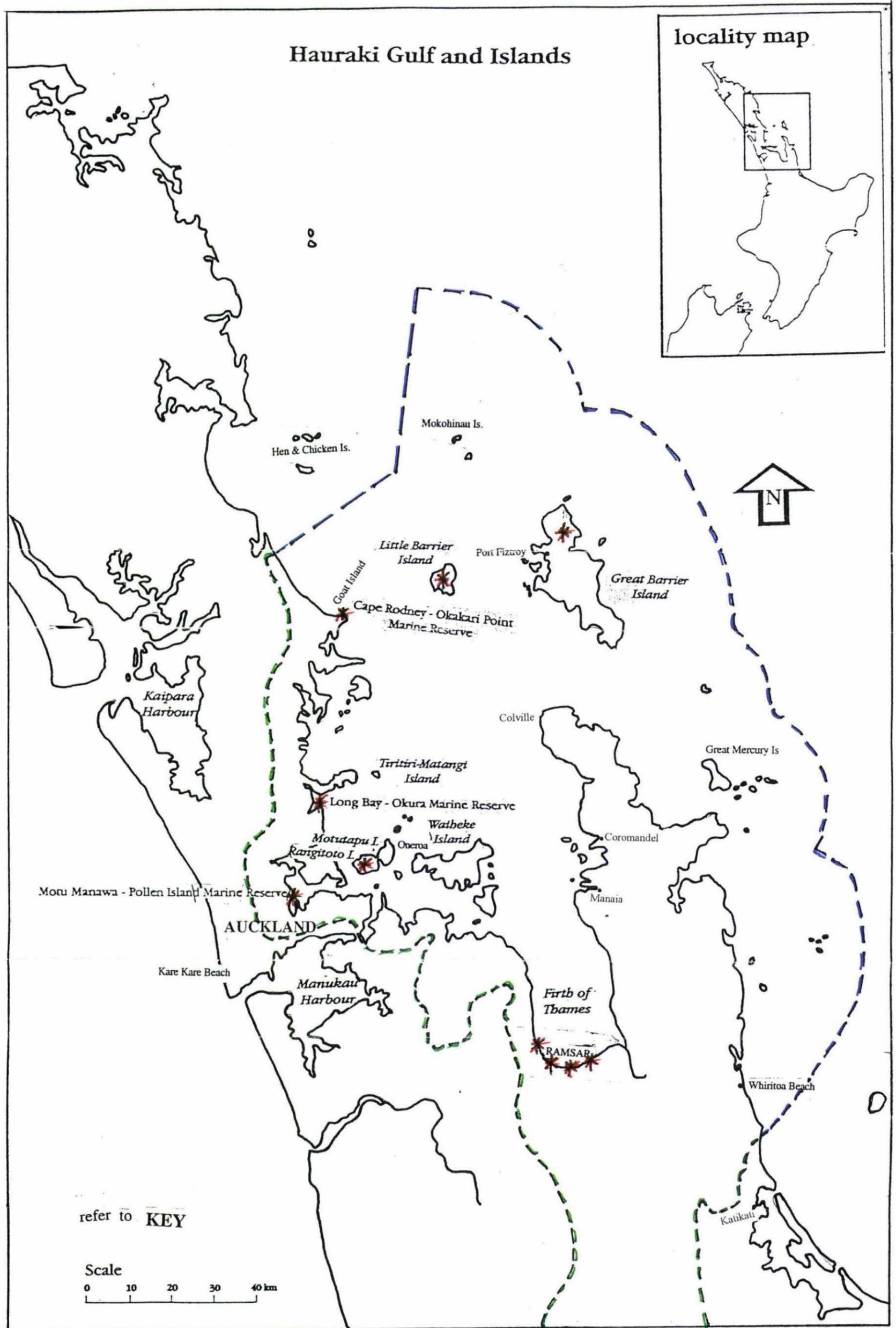
MAP TWO

-  Regional Council boundary
-  DOC Conservancy boundary
-  Fisheries Restricted Areas boundary
-  Territorial Authority boundary
-  Auckland City Council
-  Waitakere City Council
-  North Shore City Council
-  Manukau City Council
-  Rodney District Council
-  Thames Coromandel District Council
-  Hauraki District Council
-  Franklin District Council

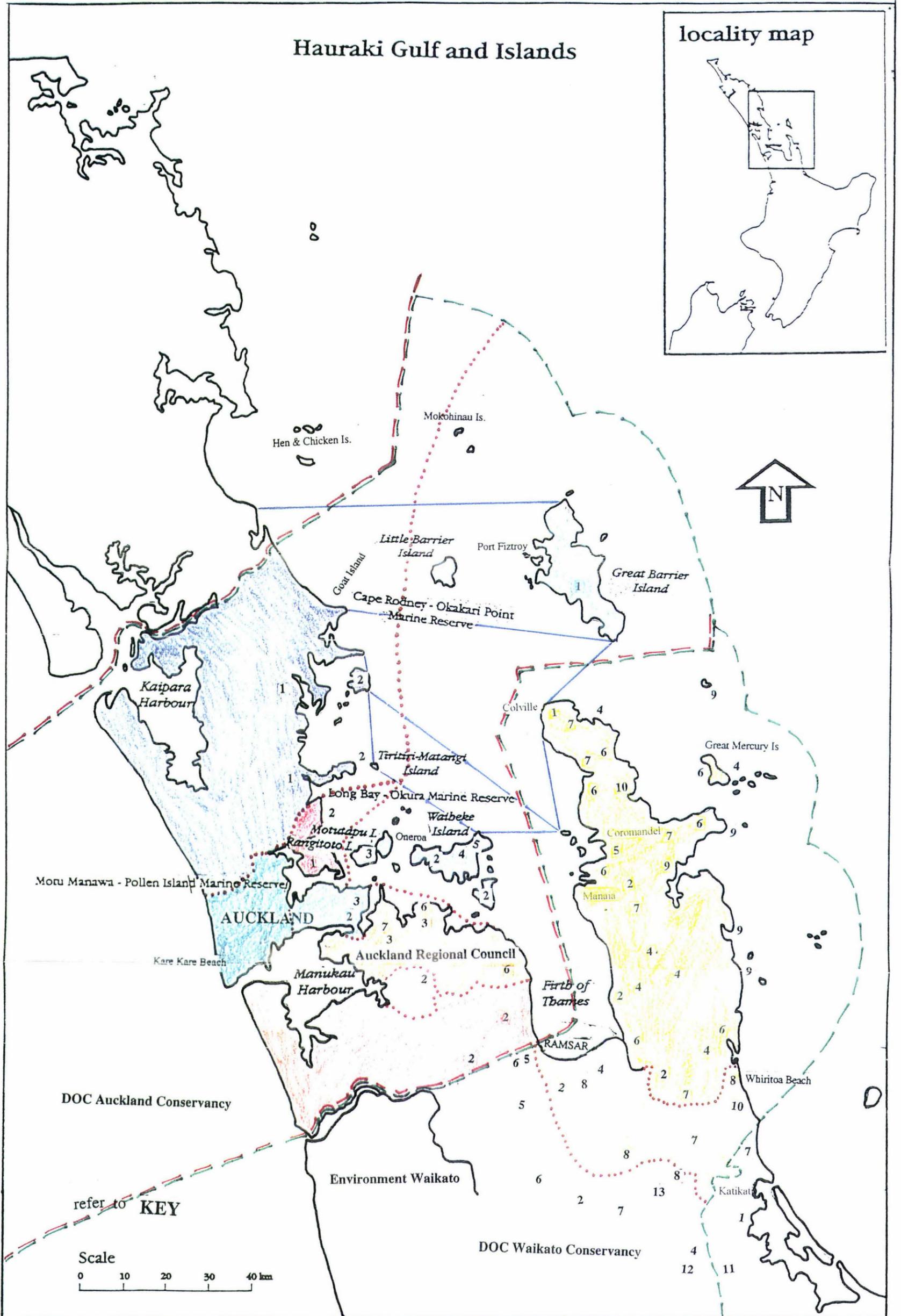
Iwi Names

- | | |
|----------------|---------------|
| 1 Marutuahu | 8 N'Hako |
| 2 N'Paoa | 9 N'Hei |
| 3 Ngai-Tai | 10 N'Porou |
| 4 N'Maru | 11 N'Tumutumu |
| 5 Patukirikiri | 12 N'Kahiri |
| 6 N'Whanaunga | 13 N'Tara |
| 7 N'Tamatera | |

MAP ONE: HAURAKI GULF CATCHMENT & PROTECTED AREAS

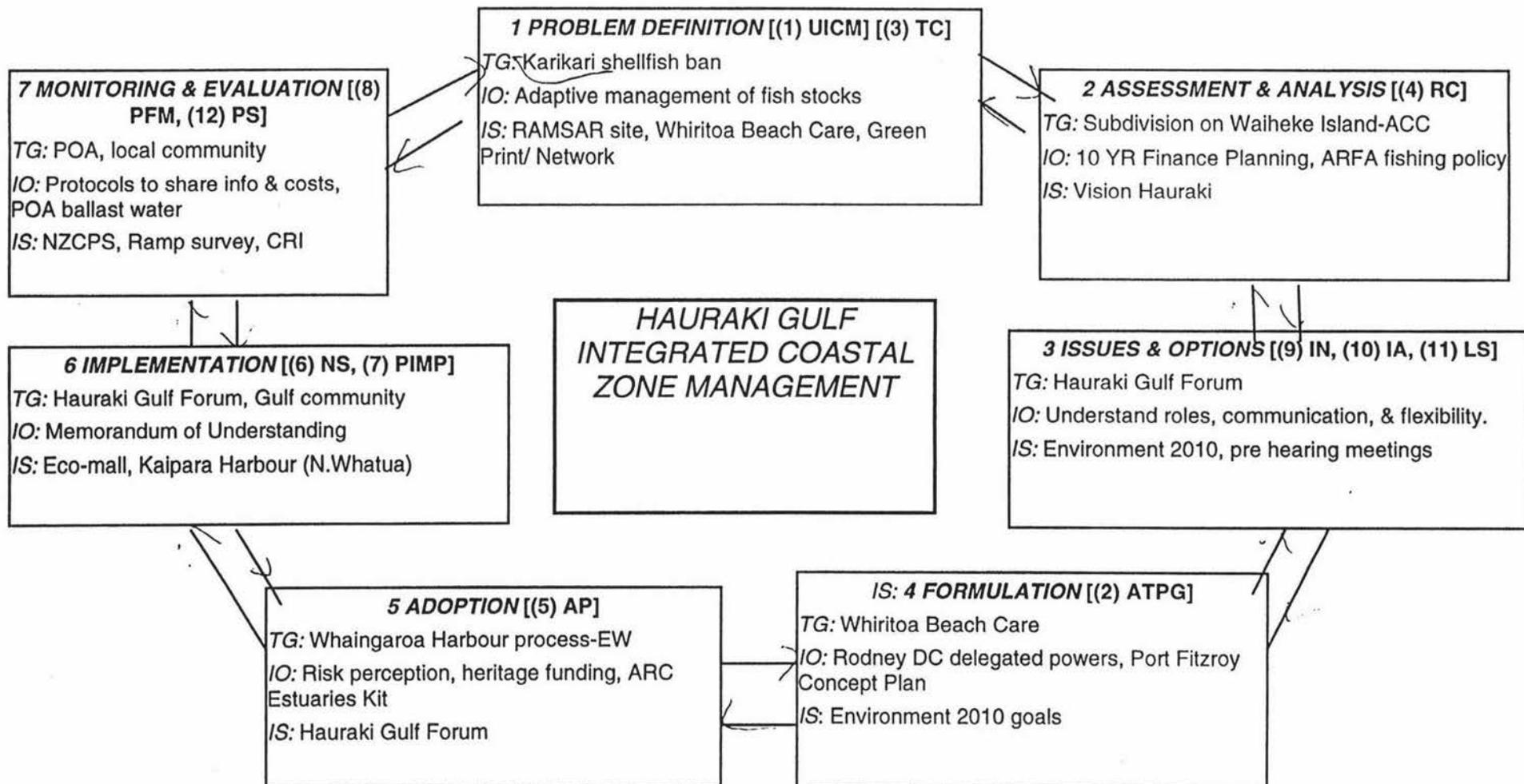


MAP TWO: ADMINISTRATIVE BOUNDARIES AND IWI LOCATIONS



Sources: MAF North Report to Caucus Environment Committee (1991), Department of Conservation, Hauraki Gulf Forum, Hauraki Gulf Marine Park Bill (1998), New Zealand Info Map 242B, Cooper (1998).

APPENDIX 10: FRAMEWORK FOR PARTICIPANT REVIEW



(TG) Target Group, (IO) Innovating Organisation, (IS) Interactive Setting, (UICM) Understanding Integrated Coastal Management, (ATPG) Approaches to Planning & Goals, (TC) Theoretical Concepts, (RC) Response to Change, (AP) Achievement Processes, (NS) Networks & Structures, (PIMP) Promoting Integrated Management Practice, (PFM) Performance & Feedback Mechanisms, (IN) Information Needs, (IA) Institutional Arrangements, (LS) Legislative Support, (PS) Participation & Support, (ARFA) Auckland Recreational Fishers Association, (ACC) Auckland City Council.

FIGURE 2 ICZM PROCESS MODEL WITH NEW ZEALAND COMPONENTS

