

A model for the implementation of ICM in the Mediterranean region

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Received: 29 April 2009 / Revised: 10 May 2010 / Accepted: 1 July 2010 / Published online: 17 July 2010
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Abstract The Integrated Coastal Zone Management (ICZM) Protocol in the Mediterranean means the coastal zone can be better protected and problems can be targeted in a coordinated manner. This research developed a model to improve Integrated Coastal Management (ICM) implementation in the region. The methodology collected data from Mediterranean coastal zone experts via semi-structured interviews and a review of Mediterranean Coastal Foundation ICM Conferences in 2007, 2008 and 2009. Results identified issues and recommended solutions at various points in the policy process and these were used to propose a model for the implementation of ICM. Research demonstrated the need for non symbolic engagement with science especially during the ex-ante, interim and ex-post reports of implementation. Improved and considered horizontal governance and capacity building was highlighted as crucial. Findings also emphasised the importance of legislatively supported bottom-up policy implementation for the Mediterranean to help develop local coastal management ownership. Finally, the particular complexity of coastal policy in an administratively and culturally diverse region was identified as the main difficulty for successful implementation of coastal policies.

Keywords Implementation theory · Mediterranean · Coastal management

Introduction

The ICZM Protocol for the Mediterranean signed on 21st January 2008 in Madrid at the Conference of the Plenipotentiaries is the seventh Protocol of the Barcelona Convention and completes the international legal protection of the regions coastal and marine environment (UNEP/MAP/PAP 2008). It was based on a realisation that the “soft laws” of coastal management in the Mediterranean were of limited use and the development of a legally binding regionally coordinated instrument of coastal management was the only way to achieve effective sustainable management of this unique coastal landscape. The Protocol is the culmination of a long process with feasibility studies from November 2001 (Monaco) to consultations, negotiations and modification up to 2008. The resultant legal instrument is unique in management of coastal regions and hence is of considerable interest to the study of coastal systems and their management (PAP/RAC 2009).

Now the formulation phase is nearly complete it is time for Protocol implementation with reconfiguration of institutional and actor involvement. Regional cooperation within the Mediterranean is at the vanguard of practice but implementation of the Protocol is inherently complex (Trumbic 2008) and interorganisational implementation is particularly conflict orientated (O’Toole 2004). Trumbic (2008) predicts a number of difficulties during the implementation of the Protocol:

- the lack of an agreed strategic regional ICM view;
- many of the countries still base ICM on land use planning rather than more appropriate resource management;
- traditional administrative structures, lack of integration and enforcement strategies;

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- the low priority of environmental considerations;
- continued lack of national and to a lesser extent, international resources designated to ICM;
- lack of civil society engagement in coastal governance.

Although these are the principal difficulties for the Protocols implementation it must also be noted that these issues are spatially and temporally diverse with differences between EU and non EU states (Benoit and Comeau 2005). These include economic, cultural, political, physical and historical differences that all make coherent policy implementation challenging. International and national efforts in recent decades have failed to produce a sustainable solution to the coastal management of the Mediterranean (PAP/RAC 2009). In addition, Suarez de Vivero and Mateos (2005) argue that some coastal problems in the Mediterranean has been caused by previous coastal policy decisions, hence management actions have been received with incredulity by many street level bureaucrats. Nonetheless, the significance of the Protocol to the future of the regions coastal and economic environment means that any tool that can aid effective and efficient implementation needs to be assessed and consulted.

Dynamic coastal zone migration, intensive agriculture, industrial development and associated infrastructure developments means policy implementation within Mediterranean needs careful consideration (PAP/RAC 2009). The CCSR (2006) report predicted that between 1995 and 2025 there would be a global 35% increase in population living within 60 miles of the sea which would be more than 75% of the total global population (Edgren 1993). Countries of the Mediterranean have up to 80% of their population living in coastal regions, (Benoit and Comeau 2005) and this is fuelled by, urbanisation/littoralisation, particularly in the south and east (UNEP/MAP/PAP 2001). There has been a doubling of coastal cities since 1950 (Benoit and Comeau 2005) and 137 million more tourists are predicted by 2025 (Coudert 2005). Furthermore, changing population is not distributed equally due to the Mediterranean topography and proximity to the sea (Carter 1988; Small and Nicholls 2003). This dynamic coastal demography makes policy implementation research crucial due to its impacts (Leatherman 2001) on increased consumption of water, energy, production of waste and coastal infrastructure (Benoit and Comeau 2005). In addition, sea level rise, sea stratification, delicate historical and ecological inheritance makes policy implementation particularly challenging (UNEP/MAP/PAP 2001).

Hence, the elements, instruments, institutional provision and coordination of the Protocol need to be effectively implemented for it to achieve its wide ranging goals. Consequently this paper assesses the views of expert commentators and implementers of Mediterranean coastal

management on implementation issues of the Protocol. These views are applied to a widely considered theoretical framework of policy implementation which has not been contextually applied in coastal policy research and this paper aims to address this gap in the literature. The research presents an overview of the evolution of implementation theory and applies it to an assessment of the Mediterranean Protocol from which a model is proposed for further academic consideration within the Mediterranean and in the wider context of coastal management.

The development of a theoretical framework

The majority of theoretical development in implementation studies has been in public administration and yet all disciplines have a fundamental concern in the relationship between intended policy aims and actual outcomes (Hill and Hupe 2002; Winter 2003) and ICM is no exception. This section aims to present an overview of the development of implementation theory to facilitate awareness of its application for ICM.

Policy is the formulation, implementation and evaluation of goals in an endless cycle and is more commonly “perceived as object than as practice” (Colebatch 2007: 2). Sabatier (1991) categorised four types of policy research: substantive area studies, evaluation and impact studies, policy process research, and policy design. Others, such as Dunsire (1995) used the terms process, structure and culture to describe the different research types promoted, while Barrett (2004) used policy analysis, evaluative studies and organisational studies. However, implementation has an independent effect on policy outcome and this was originally under represented in policy research (Palumbo and Calista 1990). In fact formulation is “merely the starting point, and it is the ensuing interaction between policy, organisations and interests that actually determines who does what, when and how” (Hyder 1984: 1). Although this view is debatable, there is no doubt that policy implementation is a complex multifaceted process which involves many actors and institutions which is clearly exemplified in the application of the Protocol and its evaluation will be significantly influenced by this part of the policy process.

The development of implementation theory was both a paradigm shift in the social sciences and an important step in policy analysis (Hill 1997). Questions were asked by politicians, policy actors and academics which led to the development of implementation studies to find the implementation deficit, for example in coastal areas Portman (2006), or, as Gilg and Kelly (1997) called it the ‘implementation gap’. This research needed a theoretical and methodological base, however the complexity of the

implementation created theoretical difficulties and inherent schools of approach (Thiel 2004) which in turn lead to considerable debate about the relationship between theory, methodology and practice (O'Toole 2004).

Implementation studies were slow to develop and it was not until Pressman and Wildavsky (1973) published *Implementation* that a new analytically distinct subject was established. Its concentration on the legislative policy objectives made this approach clearly top down in orientation and design which in turn led to the dialectic between top down and bottom up theorists. The seminal work in top down studies by Mazmanian and Sabatier (1978) based their findings on California coastal conservation research and set out a conceptual framework of variables to help explain implementation. The authors believed that “the crucial role of implementation analysis is the identification of the variables which affect the achievement of legal objectives throughout the entire process.” (Mazmanian and Sabatier 1978: 21). They identified a range of influential independent and dependent variables in an implementation process and highlighted the difficulties in implementing government coastal policy. Further top down work focused on empirical research which compared ‘perfect implementation’ with actual implementation (Dunsire 1978; Hogwood and Gunn 1984; O'Toole 2004).

The top down approach came under increasing criticism for ignoring negotiated order and this led to an opposing intellectual culture referred to as the ‘bottom up’ school (Barrett 2004). Dunsire (1995: 18) described the bottom up approach as “a kind of bargaining activity between the objectives of the keepers of organisation resources and the perceptions of need by street level bureaucrats”. Research by Barrett and Fudge (1981) clearly set out a number of criticisms of the top down school of implementation which was supported and extended by other research (Barrett 2004). For example, Rhodes (1997) suggested a considerable proportion of policies have no clearly identifiable objectives and therefore cannot be measured. Hill (1997) stated “The concretisation of policy continues way beyond the legislative process”, and certainly in coastal policy reinterpretation and policy understanding evolves through time. This approach was seen by advocates as preferential because of democratic credentials and association with public participation (deLeon and deLeon 2002; Mischen and Sinclair 2009). Although there are difficulties in identifying behavioural patterns, it highlights the importance of individual behaviour in policy outcomes even though behaviour is influenced by institutional culture and action arenas (Ostrom 2007). The theoretical framework highlighted that a policy evaluation should not measure aim achievement, but delivery performance using behavioural performance categories (Winter 2003).

Research has also focused on approaches to synthesise implementation analysis and adopt contingent perspectives on implementation (O'Toole 2004). Goggin et al. (1990a) and Lester and Goggin (1998) identified this phase of implementation theory as ‘third generation’. The most influential attempts at merging the “theoretical pluralism” of implementation theory (Ryan 1996: 737) included the empirical *communication model* of Goggin et al. (1990a, b), the integrated approach to implementation analysis by Winter (1990, 2003; Ryan 1996) and the synthesis of implementation theory using *advocacy coalition frameworks* by Sabatier (1986, 1988, 1991, 1993, 2007), Sabatier and Jenkins-Smith (1988, 1993, 2007), Barke (1993), Thiel (2004), Weible (2007), and Weible et al. (2007). For more detailed evaluation of these models refer to (House and Phillips 2007). Other models include the *ambiguity conflict model* (Matland 1995) and more recently the *learned implementation model* (Schofield 2004).

Difficulties establishing sound theoretical implementation frameworks meant there was no single strategy, instead strategies needed to be theoretically informed and contextualised (Matland 1995). This theoretical complexity resulted in reduced research in core disciplines from the late 1990's (Barrett 2004), however non core multidisciplinary field research grew exponentially. There is now a reinvigorated culture to test, apply and develop implementation theory to inform practice with a streamlined theoretical diversity in both core and non core fields of research (Saetren 2005) and ICM needs to be at the forefront of these developments.

Methodology

The methodology was based around the collection of data from experts of ICM in the Mediterranean. Data collection was based on the Mediterranean Coastal Foundation international conferences of 2007 (Alexandria), 2008 (Akyaka) and 2009 (Sochi). The wide ranging expertise attending and presenting at these conferences represented a unique opportunity to draw on the knowledge of various viewpoints and experiences of implementing Mediterranean ICM. Hence, data was collected from semi structured interviews with contacts from these conferences and informed by a traditional narrative review of conference proceedings. Interviews were selected using a stratified sampling strategy based on interviewee's organisation (Table 1). These included organisations from EU member states, EU candidate states, non EU Mediterranean states and representatives from organisations outside the region but with specific expertise of coastal policy within the Mediterranean basin. Sampling was also stratified into a matrix based on level of government involvement, spatial

Table 1 Interview matrix

Organisation Type		Numbers interviewed		
Med. EU Members (EU)		30		
Med. Candidate states (CEU)		18		
Med. Non EU (NEU)		14		
Other expert Med. Commentators (O)		14		
Total		76		
Organisation Type	NGO (N)	Quasi-government (Q)	Government (G)	Total
Regional/Local Authority (L)	0 (LN)	4 (LQ)	18 (LG)	22
Multinational (M)	8 (MN)	20 (MQ)	2 (MG)	30
Research (R)	1 (RN)	22 (RQ)	1 (RG)	24
Total	9	46	21	76

jurisdiction and if their principal role was research. Furthermore, numbers interviewed were provisionally based on countries length of coastline and Mediterranean coastal population to gain a basic but representative view of the Protocol's implementation. Table 1 shows that interviews were representative of Mediterranean basin but local NGO organisations proved difficult to contact. Nonetheless, many of the multinational quasi-government and research organisations had extensive experience of this sector so their views were represented.

Seventy six interviews were undertaken designed around themes proposed by House and Phillips (2007) which were informed from implementation theory. Themes were based on three parts of the policy process, formulation, implementation and monitoring. Formulation was themed into, subject analysis, fundamental relatively fixed and unstable frameworks. Implementation was themed on supranational, national, local issues and roles of, intermediaries, target groups and reporting. Monitoring included output, outcome, ex-post evaluation and feedback. From the evaluation of results a conceptual model was developed to help communicate to principally an academic audience the potential role of implementation theory in coastal policy research and to facilitate design of more applied implementation mechanisms for the Mediterranean Protocol.

Results and discussion

Results were structured into interview themes then split into issues raised and their recommended responses for the Mediterranean Protocol (Table 2). The interviewee results are presented in terms of corresponding responses from more than 20% of the cohort (>15.2 interviewees). Results also show the relative proportions of respondents from different organisations to note any particular spatial patterns within Mediterranean basin. Narrative review

findings are applied to the interview results and are included in the discussion to emphasise and further evaluate interview material. Finally, information was used to construct a model to assess its application to the implementation of the Protocol and generically ICM (Fig. 1).

Findings suggest Mediterranean coastal policy processes are fundamentally influenced by fixed and relatively unstable features (Table 2). When considering regional coastal policies, there is clearly a need to identify the relatively fixed and unstable framework on which policy development must be based. The Mediterranean basins political structure, heritage, physical processes and globalisation, although not fundamentally influenced by coastal policies, are central to understanding opportunities and problems within the Protocol's implementation. This part of policy evaluation is often just presumed and hence given palpable and scant attention. However, this research argues Mediterranean coastal policies need to engage with this part of the policy process. For example, political structure and its interactive processes need to be clearly understood to facilitate the Protocol's coherent and efficient application. More surprisingly, both fundamental and other themes emphasised the importance of non-symbolic or committed engagement with historical heritage and geomorphological scientific research. This supports the views of Finkl and Kruempel (2005) who suggest that scientific theory and policy often work well together in coastal policy but there are difficulties at the implementation phase.

Furthermore results emphasise the need to classify coastal character in terms of its human and physical attributes as a basis of risk assessment and prioritisation, which in turn should inform an ex-ante implementation report using GIS and remote sensing. The substantial amount of existing Mediterranean research means the region is in an enviable position to develop a coordinated classification of the coastline which will facilitate both

Table 2 Issues and recommended responses to the implementation of ICM in the Mediterranean

Issue at point in policy process	Recommended response	Category% of interviews			
		EU	CEU	NEU	O
Fundamental relatively fixed framework					
Political structure	Understand and work within structure	73	94	61	71
Historical heritage	Classification and prioritisation of sites	63	61	71	50
Physical processes	Engagement with existing coastal geomorphology research	73	67	21	50
Globalisation and international trends	Included in ex-ante report	20	33	21	50
Fundamental relatively unstable framework					
Public opinion	Public participation	80	89	77	43
Physical processes. Coordination of terrestrial, coastal & marine	Expert non-symbolic scientific engagement in policy process	73	78	57	79
ICZM Protocol Mediterranean	Complete ratification & internal legislation	93	83	50	43
Human resources in CZ	Importance of education and ICM resources	73	72	71	50
Technology and science	Use of remote sensing/GIS	63	61	42	71
Socio-economic and cultural issues	Stakeholder involvement in whole process	53	50	71	43
Political changes (elections)	Political commitment	53	61	50	36
Legislation	Consider possible impact of other legislation	37	33	36	43
Other policy decisions and outcomes	Monitored and prioritised	37	22	29	36
Subject analysis (risk and priority)					
Coordination, amalgamation and dissemination of science	EUCC/Commission to disseminate to all coastal managers and national administrations to help develop master plan	47	44	57	77
Measurement of aim and outcome	ICM needs to clearly state measurement and success criteria. Ex-ante Report	23	33	7	36
ICM language and procedures	Clear translations and personal correspondence, culturally specific glossaries	13	17	36	21
Classification of coastal character both geomorphologically, economically and historically	EUCC/Commission (or similar body) to set criteria and coordinate publication of coastal classification for the whole region	13	22	21	29
Policy formulation					
The significance of clearly defined, understood and achievable policy objectives from EU/non EU	Both strategic and local objectives need to be carefully constructed and realistically achievable within resource and time constraints	53	67	43	71
Scientific disengagement	Internalise science into policy	30	39	43	79
Implementation (Roles, norms and strategies)					
Limited number of ‘personalities’ great power & discretion	Selection and regional ICM champions Clearly communicated roles	57	72	71	57
Public participation & partnership	Stakeholder	60	61	64	57
Committee membership: structure, roles & involvement influence outcomes and process	Locally embedded and internationally guided committee structure which evolves with programme into a partnership	53	67	50	57
Negotiation, bargaining, conflict (may imply dependency), power perceived and actual) and discretion points	Clearly identified timetable, agenda and administrative structure	40	61	64	43
Variability of implementation is linked to advocacy coalitions capacity and strategies	Development of strong advocacy coalitions Need for horizontal and vertical coordination	20	22	21	43
Supranational					
Europeification of the Mediterranean CZM	International networking especially with the non EU states	37	56	29	71
The Protocol is a statement and has no influence on physical processes or social frameworks until it is translated into action	Clearly defined calendar of implementation	30	44	14	50
Compatibility and ambiguity of policy	Communication and flexibility	13	22	29	43

Table 2 (continued)

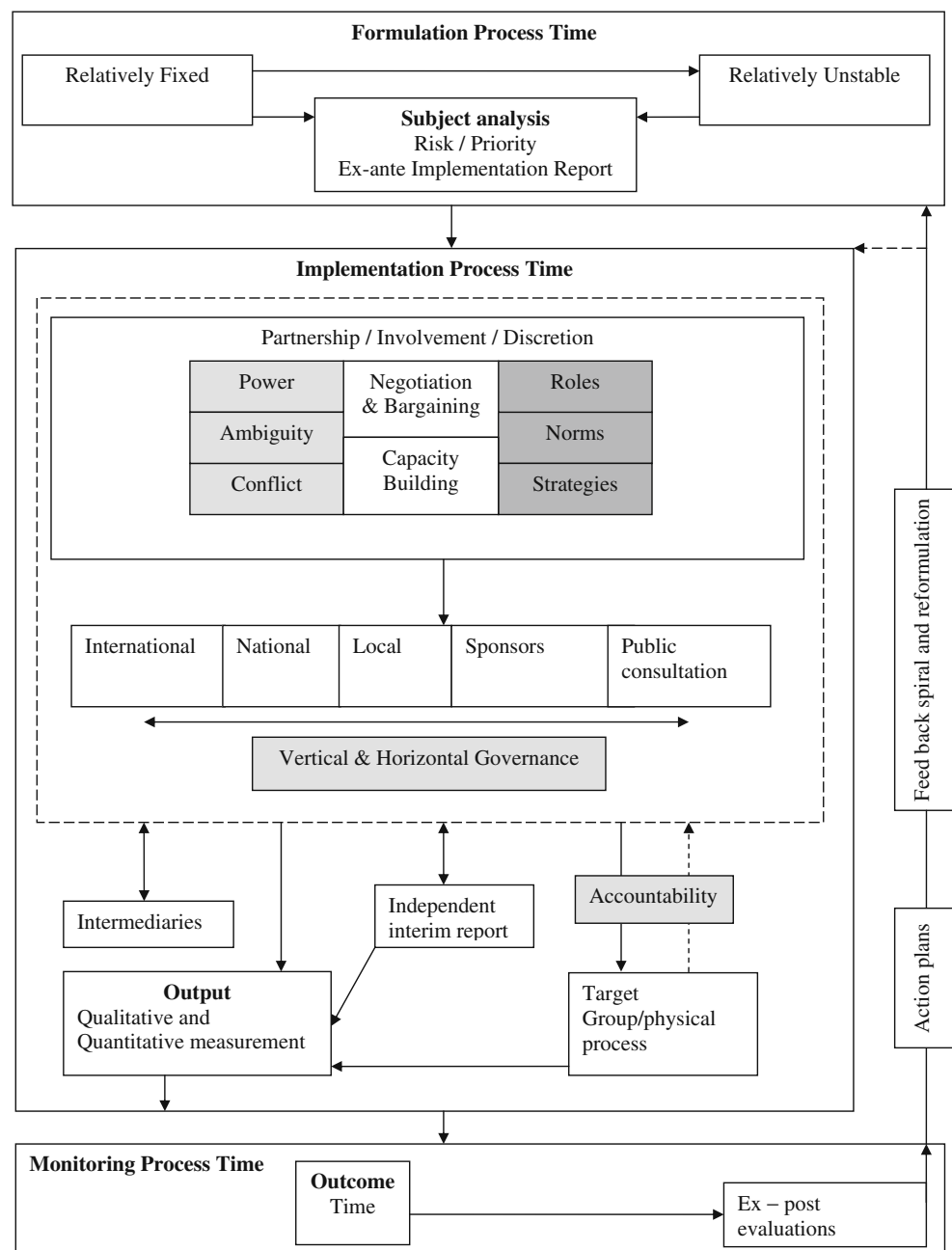
Issue at point in policy process	Recommended response	Category% of interviews				
		EU	CEU	NEU	O	
National						
Realistic resource allocation and legislative powers to support stakeholders and avoid additionality	Societal capacity building and non symbolic financial and legal engagement	70	67	71	64	
Training and dissemination of ideas from within nations and between	Awareness raising of National Strategy	40	44	36	43	
Local						
Lack of local stakeholder involvement and ownership	Locally considered formulation and increasingly independent implementation. Bottom-up	53	56	50	43	
Intermediaries						
A need to monitor duplication of work between organisations	Monitoring and dissemination strategies. PAP/RAC. Interim reporting	37	39	29	50	
Education and training needs to be linked to need. Other disciplines e.g. judges and Mandarins need to be considered	Mediterranean Coastal Foundation/PAP/RAC (Coordination team)	20	28	29	43	
Interim report						
Regular monitoring	Needs to be legally binding to create administrative inertia	43	44	43	50	
Dissemination and increased awareness of data/information	Independent committee	20	29	29	36	
Target groups (Identification)						
Importance of assessing target groups and their needs	Engaged and professionally embedded, not ambiguous to locals	43	33	36	43	
Local disengagement	Locals need to progressively become empowered through time. Leads to independent local ownership	37	39	21	43	
The fundamental objectives are often politically orientated	Need to consider local stakeholders and physical needs of the coast more effectively	30	28	29	43	
Time						
Non completion of programme	Longer time frames of at least 7 years	53	44	21	57	
Instead of ‘new plans’ concentrate on achieving realistic existing plans	Existing plan engagement	30	56	14	57	
Output and outcome						
Measurement of impact and achievement of objectives	Need for empirical and qualitative assessment of policy impact	73	67	21	79	
Independent assessment	Highlight loss and gain through scenario development and communication	20	28	0	36	
Visibility, awareness and transparency	Multi-level awareness strategy. Visible results	17	22	21	21	
Ex-post evaluations and monitoring						
Measurable & enforceable	Constant and nationally coordinated through legal obligations (ICM) environmental court	60	67	50	71	
Overly focused on financial assessment	Holistic assessment and action planning	43	44	50	57	
Feedback spiral and reformulation						
Differentiation of results	Assessed and disseminated using common but culturally sensitive formats. For example SMART	10	22	50	29	

identification of future research needs and coordinate information requirements for policy implementation. However, academic tools and their coordination need to be internalised within institutional and societal frameworks to be effective (UNEP/MAP/PAP 2001). This has been partially realised by recent events, for example establishment of PEGASO project which aims to improve the

connectivity between science and policy at various levels of coastal management in the region. It is clear that a coordinated relationship between research and Protocol implementation is fundamental to the regions CZM.

The theme of relatively unstable issues highlighted the importance of public participation and its role in influencing public opinion, which the majority of respondents

Fig. 1 A proposed model for the implementation of multinational ICM policies



suggested this bottom-up approach was a prerequisite for successful implementation. However, full ratification of the Protocol was deemed vital and the importance of internal legislation was highlighted in relation to concerns over coordination of Mediterranean coastal management hence supporting top-down significance. This is an important finding for theory, in addition to practice, because it supports the argument that top-down versus bottom-up is a misplaced dialectic that needs to be conciliatory and 'fit for purpose'.

The importance of human resources was emphasised both in terms of quantity but also in relation to the development of common skills and communication throughout the region to

encourage standardisation and coordination. Twenty two respondents suggested an International coastal zone management programme, focusing on the needs of the Mediterranean, with clear validation criteria and an accepted professional status. Although courses of this nature do exist, for example the Mediterranean Coastal Foundation Programme (2010), there is a requirement for wider dissemination and support to create full Mediterranean recognition and status to facilitate the development of a ICM 'Guild' which should be regionally orientated but based on internationally agreed practice and concepts. Furthermore, some of these respondents emphasised the importance of coordinating methodologies between the terrestrial, coastal and maritime environments so that the

Mediterranean could experience coordinated sustainable management beyond the coastal jurisdiction. There was also seen to be an important role for technology and science in facilitating this coordination and standardisation.

Additional issues and responses included the role of socio-economic and cultural diversity in forming the character of ICM and the need to embed local stakeholders in the whole process, this response was particularly significant within the non EU results. Other issues included how political commitment needs to transcend political change to help establish long term coherent policy implementation. Finally, non Protocol legislation and policies were mentioned in relation to their impact on coastal policies. For example, a respondent argued that transport policy would have a major influence on ICM in their locality and others confirmed similar experiences. The predominant response was the need to monitor such policies throughout the Mediterranean and to measure the impact on the Protocols outcomes.

The subject analysis section further supported the vital role of internalised and coordinated science but added the importance of the EUCC and highlighted the significance of clearly stipulated measurement and success criteria for the Protocol's implementation. Furthermore, results showed that the cultural mix means that language and procedures need to be carefully translated and sixteen respondents suggested the publication of culturally considered glossaries of procedures, aims and measurement strategies. This reply was particularly prominent amongst the non EU respondents which could reflect their perceived predominance of EU involvement in formulating the Protocol.

Policy formulation supported the importance of clearly defined and agreed objectives to engage with street level bureaucrat understanding and effective implementation. Although the Protocol agenda has been innovative, comprehensive and supplies some specific definitions, the implementation phase complexity has not been fully considered (Trumbic 2008). Both strategic and local objectives need to be coordinated to create realistic policies with appropriate resources so that problems associated with symbolic policy agendas can be avoided. The potential problems of generic Mediterranean based policy objectives and the need for regionally orientated policy formulation is a requirement of coherent, successful coastal policies (Phillips and House 2009). Horak and Starc (2008) argue that even similar areas often have different policy needs and this point seems to be particularly pertinent in the Mediterranean basin.

The specific implementation theme realised a number of interesting findings in addition to the already considered issues. The majority of interviews suggested a few personalities could have a disproportional influence with clear discretion points during implementation. In associa-

tion with this, the interrelationship and membership of implementation committees was a major issue with perceived and actual power causing potential conflict. Implementation theory research suggests this stimulates policy evolution during implementation and certain groups or individuals can feel their views are not appropriately considered hence conflict becomes intrinsic. This can lead to advocacy coalitions making decisions and comments based on constructed opposition to other groups in the process (House and Phillips 2007). Results emphasise solutions to this issue: write clearly defined and communicated role profiles, adopt democratically selected ICM champions, communicate identifiable timetables, have locally embedded and internationally guided committee structures. However, who writes the roles, who votes, how are committee members selected and over what time frame? The answers to these and other questions will fundamentally influence the 'personalities' and committees mandate from which the form of implementation evolves.

Table 2 also demonstrates that multi-level governance capacity within coastal policy implementation is still not a reality. The EU is becoming increasingly involved in coastal policy development and the Europeification of the Protocol was perceived by many respondents. EU involvement creates opportunity but also governance difficulties such as differentiated funding and administrative responsibility between EU and non-EU countries. The Protocol and various EU/Non EU policies need careful consideration and must not be seen as a form of regional development grant where resource allocations has precedence over project aims. Other studies have highlighted the peculiarities and difficulties of multinational implementation and agree that further research to develop effective solutions is needed (Perkins and Neumayer 2007). Casazza (2008) emphasised the importance of synergy, the need to identify network linkages and the mutual effects of existing strategies, for successful implementation within the basin. In addition, results highlighted that much of the Protocol are stipulations that will have limited influence until they are applied to a clearly defined calendar of implementation at all levels of administration.

At national level difficulties are based on resource allocation and the highly politicised nature of funding, which arguably makes symbolic gestures more likely. A high proportion of respondents used the widely discussed term of additionality which emphasises the need to have transparent funding schemes so that allocated resources are truly additional. Results agree with the conclusions of Weinthal and Parag (2003) that there is a need to target not just state but also societal capacity. The development of national strategies needs controlled administrative coordination and awareness raising techniques (Gonzalez-Riancho et al. 2008) while national authority needs to actively

support stakeholders with power allocations through legislative channels (Ernoul 2008). Lucius et al. (2008) stated that in the Mediterranean there is a need to emphasise the interdependence of powers through stakeholder negotiation. The importance of learning ICM principles and applications has not been fully recognised politically or even practically. Research suggested long term Protocol success will be significantly influenced by quality mechanisms and international commitment to ICM learning. Therefore ICM needs to develop profiles of ideal managers within a professional and local context (UNEP/MAP/PAP 2001). The importance of learned implementation was previously stipulated by Schofield (2004) and has been emphasised for ICM by Cicin-Sain et al. (2000) and specifically for the Mediterranean by Ozhan (1998) and Trumbic (1998).

Research outcomes stressed the importance of a bottom-up approach to ICM implementation in the Mediterranean due to how the region is embedded in local cultural dynamics. For example, Ernoul (2008) participatory research in Morocco evaluated the success and practical considerations of such an approach and highlighted the significance of locally embedded implementation of coastal policies. The respondents argued that stakeholder participation is a vital corollary to successful implementation and the use of moral agreements and locally negotiated resources with shared responsibility will lead to sustainable policies in the basin. Wescott (2004) argued there is a need to balance multinational, national and local coastal objectives with a transparent sense of ownership and this view was supported by the results. Public participation, ownership and active involvement seems to be a prerequisite to any successful long term, resource constrained coastal zone policy in the Mediterranean. Findings identified the importance of such an approach but only partially addressed mechanisms to achieve such a goal, for example coastal days (Kaboglu and Guclusoy 2008). However to help contextualise these findings, some research argues that a bottom-up approach is unsustainable in ICM and implementation requires sound statutory support and should be non voluntary where possible (McKenna and Cooper 2006). The Protocol is founded on the realisation that voluntary agreements had not made significant progress since the Barcelona Convention (Revised 1995) and there was a need for a viable legal framework (PAP/RAC 2009). Hence, the Protocol addresses both the need for statutory support and the development of local capacity. This integrated approach to implementation is central to the model (Fig. 1) which emphasises the role of combined bottom-up and top-down approaches to Protocol success. At present groups within ICM argue for one approach or the other, this research suggests they are not mutually exclusive and need to be considered in terms of which

part of the process is best achieved by which or a combination of approaches.

Findings also indicated the importance of intermediaries and the significance of interim reporting. Evidence suggested that the Priority Actions Programme/Regional Activity Centre (PAP/RAC) undertakes this type of work and there is a need for continued and increased political support of this organisation to facilitate Protocol implementation. However, others commented that PAP/RAC's non-democratic form means the required resources and power to fully appreciate such a role will only be partially realised. This is likely to detract from the ability of the region to fully achieve its coastal zone goals. For example, results highlighted the need to monitor duplication of work particularly between local and national administrations because it can negatively influence the limited time and financial resources of the Mediterranean's ICM. There is a requirement to adopt action awareness systems so that implementation can be informed, efficient and effective. A suggested mechanism for this was regular interim reporting chaired by independent representatives with legally binding systems and effective dissemination channels. Although these already exist in various forms, the results suggested they had not been fully effective.

Arguably, the most important part of any implementation process is the target group experience. ICM is unusual in implementation research because the target group is not only human and ecological, but includes physical processes. Hence, identifying the regions geomorphological concerns are the basis from which human and ecological issues depend. Target group results, concentrated on the populations socio-economic needs and the argument that these needs are often politically formulated. It was suggested that long term sustainable coastal management should start with the physical landscape, as it can determine the spatial and socio economic human/ecological landscape, on which policy is judged. Other findings from this section highlighted the preponderance of politically orientated objectives which requires re-focusing on target groups and local stakeholders. Hence, there is a requirement to regularly monitor and assess policy impact on intended recipients.

Temporal considerations of the Protocol were important, results emphasised the long time frame required for its formulation and generally agreed that implementation would require additional timeframes. The EU respondents suggested a minimum of 7 years before a comprehensive review of the Protocol should be initiated. Other research supports the need to have appropriate time horizons and Pickaver et al. (2004) suggests 8–15 years for implementation assessment and Sabatier (2007) identified the need for politically unfashionable long term research projects with appropriate time horizons. However, the findings

emphasised that a Protocol review should be the culmination of regular monitoring. Some suggested a cascading approach from local review to regional review and resultant Protocol adaptation. In addition, results showed that, where possible, local existing coastal strategies should be the basis for the Protocol instead of developing 'new plans' and networks. There was a general agreement that inertia of good practice should be built on within the structure of the Protocol.

A particular concern identified by results was the comparatively limited output and to a lesser extent outcome assessment. There was a strong feeling to develop locally embedded, independent, empirical and qualitative assessment of the Protocol within a realistic timeframe. Independent assessment based on scenario development and innovative multi-level awareness raising seems to be the direction for outcome and output assessment within the Mediterranean, although support for this approach was marginal. A few suggested monitoring, assessment and dissemination needs to be based around an expert evaluation and should be holistically tested on case studies within a culturally sensitive context. Many respondents emphasised importance of legally framed evaluations which could be coordinated through an environmental court with a special focus on the Mediterranean. Others highlighted the need to assess achievement in a holistic approach and additionally suggested financial assessment should only be a component of the assessment criteria. Most agreed the monitoring, assessment and dissemination should be legislatively framed within a feedback spiral which should be the basis of the Protocol's reformulation and other Mediterranean research emphasises the importance of visible results (Sumpster and Dokic 2007).

Hence, results highlighted a range of issues and recommended responses for the implementation of the Protocol. Although the research was specific to the Mediterranean, many of the findings are generic both to multinational coastal management and other policy fields. This in itself is a significant point because it highlights comparability of coastal issues and responses which in turn suggests a generic model for implementation of coastal policies is a worthy goal. The academic model presented here is based on implementation theory and can be a stimulus to provision of additional research which can test, edit and generically apply such findings (Fig. 1). The model highlights implementations centrality in the policy process and the importance of a cyclical system that allow lessons to be learned and incorporated into future strategies. The model shows that although formulation, implementation and monitoring can be presented separately, their research and understanding are fundamentally linked. Within formulation the importance of fixed and relatively unstable issues are emphasised and although they are very difficult to manipulate their appreciation is fundamental to Mediterranean's ICM. The

implementation phase highlights the importance of difficult to measure findings. The role of capacity building, negotiation and discretion points seem particularly important in this research and how they act as a sub block in governance between different levels of administration and the public. This model argues that the role of vertical and horizontal governance in multinational implementation is particularly crucial and certainly these findings exemplify their importance. In addition, the funnelling of this governance to the target group and the links with accountability has been highlighted because of their interrelationship with output and inevitable outcome. Figure 1 also shows the theme of reporting; this is integral to the process and includes ex-ante, interim and ex-post evaluations that need to be legally constituted. This leads to a feedback spiral and the importance of suitable time horizons which will help facilitate a more effective process of ICM in the region.

Conclusion

The application of implementation theory to facilitate ICM in the Mediterranean accesses a research tool to improve understanding of coastal policies in the region and beyond. This research acclaims the innovation and vision of the Protocol and highlights particularly the inter-connectedness and inter-dependence of implementation with its plethora of actors and administrative/cultural variations. Results showed that implementation problems can be partially solved during the process if the policy is designed to accommodate and anticipate unforeseen problems through capacity building and actors commitment. It also found that a bottom up approach which is legally framed and scientifically informed will increasingly lead to local coastal management ownership and hence establish sustainable coastal management in the Mediterranean.

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