

Sustainable cooperation as the challenge for a new coastal management paradigm

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Abstract. Coastal management is a collective action. As such, it depends for its effective implementation on the cooperation of a multitude of stakeholders, i.e. civic organizations, economic interest groups, environmental groups, governmental agencies, scientists and other individuals. Where 'effective implementation' implies the achievement of targeted objectives within targeted time horizons and 'cooperation' connotes that stakeholders elect to pursue cooperative strategies that may yield higher gains for all stakeholders instead of competitive strategies that may maximize individual benefits. Thus, the fundamental challenge of Coastal Zone Management (CZM) is to maximize the effectiveness of this management by maximizing and sustaining stakeholder cooperation. I submit that sustainable cooperation can be maximized and nurtured for its voluntariness only by a process-oriented, cooperative CZM. The alternative, outcome-oriented, normative CZM can force, directly or indirectly, cooperation but it cannot sustain it. My purpose in this paper, is to highlight arguments supporting this view as well as the analytical challenges of cooperative ICZM. Certain points are also viewed in the light of preliminary findings of a research project designed to probe these challenges.

Keywords: Decision-making; Equity; Integrated Coastal Zone Management; Questionnaire; Stakeholder; Value discourse.

Abbreviations: CCZM =Cooperative Coastal Zone Management; IC(Z)M =Integrated Coastal (Zone) Management; NC(Z)M =Normative Coastal (Zone) Management.

Introduction: The current practice of outcome-oriented, normative coastal management

Current coastal zone management (CZM) favours outcome-oriented, normative approaches (NCZM). The main reasons, other than inertia, are: (a) the pre-eminence of the 'logical positivism' as the foundation of empirical social analysis; and (b) the demonstration by positivist analysis of the tragedy of the commons threat (Hardin 1968), the prisoners' dilemma paradox (Dawes 1973) and the logic of collective action (Olson 1965).

Positivist analysis (i.e. rational, expert-based analysis) is considered capable of determining 'best' institutional or structural CZM-solutions. These are comprised of established organizational frameworks (governmental, market) and mostly top-down decision making approaches, for instance permit systems, allocations of rights, shore-land restrictions, zoning, area plans, acquisitions, restorations, quotas (e.g. for fishing), water supply and quality measures, cost-benefit analysis or risk assessment.

Solutions in Normative Coastal Zone Management constitute actually restriction or coercion by legislative authority. They attempt to coordinate stakeholder actions by altering the pay-off structures that influence the stakeholders' selection of:

- (1) a bargaining strategy vis-à-vis the other stakeholders, when market frameworks are utilized; or
- (2) a behavioural pattern, when governmental frameworks are employed. NCZM is not concerned with cooperation. Opposition to its solutions is, by definition, irrational and should be dismissed as such.

The effectiveness of NCZM is debatable, however. Its history establishes that the advantages of adopting solutions considered as 'best' because they are recommended by expert-based analysis can be dissipated during an arduous implementation process, marred by rancour and litigation. More to the point, the fact that calls for integrated coastal zone management continue to be made with increasing urgency and the concern over the sustainability of coastal zones is escalating, despite a prolonged effort to comply with positivist prescriptions, emphasizes that such prescriptions are less than effective.

Recognition of this reality explains the continuous attempts to improve on what constitutes 'best' decisions or how 'better' such decisions can be determined with, e.g. conferences of experts, calls for educating the public on the superiority of expert-recommended 'best' solutions and treatises on rational vs. emotional logics. The potential for success of these efforts is also debatable, however. 'Best' solutions do not pre-exist expert-based rational analyses but they are defined by them with:

- (1) dubious assumptions, e.g. concerning the availability and accuracy of information, zero cost of stakeholder opposition, the linearity of the world, etc.; (2) an inability to avoid mistakes of fact or logic to always reach the same conclusions;
- (3) a necessary exclusion of all considerations that cannot be formally modelled, e.g. issues of equity and justice; and
- (4) the unavoidable fate of becoming social constructs themselves, i.e., analyses influenced by 'fashionable ideas', ideology and social-political values.

More importantly, normative, rational decision-making models and analyses are misleading and inappropriate when transplanted to the public policy arena from the world of individual decisions where they may have been usefully applied. In the public policy arena, decisions are not 'made' by a single individual but are 'negotiated' by competing stakeholders, including institutions, and negotiation is not comprehensive but sequential.

I submit that the growing calls for integrated coastal management (ICM) as a better approach to achieving the sustainability of coastal resources than the current practice also ignore these realities (for instance Chapter 17 of Agenda 21 of the 1992 UNCED conference in Rio de Janeiro; Cicin-Sain 1993; Cicin-Sain & Knecht 1997). Consider the following representative definition of ICZM: "the comprehensive assessment, setting of objectives, planning and management of coastal systems and resources, taking into account traditional, cultural, and historical perspectives and conflicting interests and uses" (Anon. 1993). It actually prescribes ICZM as the quintessential NCZM-approach. Hence, I have expressed great reservations regarding the efficacy of ICZM as a basis for finally choosing effective CZM-solutions (Davos 1998).

Having so asserted, let me hasten to emphasize, however, that ICZM best epitomizes what should be the role of the experts, which is not to dictate choices as 'best' but to assist in comprehending coastal resources as a single system and, thus, defining the 'right' problems, developing the 'right' alternative solutions and arriving at a more comprehensive assessment of the impacts of these alternative solutions. If the experts believe that they can determine the 'best' choices for everybody and want to voice their preferences for them, they must agree to participate as another stakeholder group in a coastal management process carried out along the following lines.

Process-oriented, cooperative CZM

When expert-recommended 'best' solutions can be debated and changed by negotiation, they cease to have validity as an analytical CZM-goal. Instead, CZM should be analysed as a political, collective process that determines its outcomes by negotiation and depends on cooperation to be effective. Such a process requires the direct, pro-active involvement of the entire policy, i.e., of all stakeholders. Alternatively, the focus of analysis should be a process-oriented, cooperative CZM (CCZM). CCZM may not preclude the final consideration of expert-recommended solutions, provided that they are selected through bottom-up decision making approaches which will maximize stakeholder cooperation, e.g. through bargaining, conflict management and cooperation agreements.

The argument that negotiated policies may be the reality but that the 'tragedy of the commons' dictates an effort to reverse this reality with a normative approach finds a response by a growing literature that shows that 'free riding' is not always the choice of stakeholders when managing common resources (see for instance Crance & Draper 1996; Ostrom 1996; Edwards et al. 1997). Moreover, as principles 10 and 22 of the Rio Declaration partially demonstrate there is a growing recognition of the importance of the pro-active and direct participation of stakeholders in the entire CZM-process, which is a fundamental prerequisite of cooperative CZM.

The major analytical challenges of CCZM are:

- (1) to establish the conditions for a CZM-process to maximize and sustain voluntary cooperation; and
- (2) to develop an analytical support system that will assist the stakeholders as well as a neutral mediator (e.g. a governmental agency) to (a) determine the feasibility of cooperation and develop conflict management and cooperation strategies; and (b) identify cooperative, 'effective' CZM-solutions.

Conditions for sustainable cooperation

Several suggestions have been proposed for establishing a CZM-process that induces cooperative behaviour. They include:

- Formal mechanisms, e.g. privatization of property rights, decentralization of incentives within common ownership and control, delegation of management responsibility to an agent so that participants are limited to a monitoring role; and
- Informal mechanisms, such as making the future matter by threatening, for example, with exclusion from the common resource violators of present

cooperative agreements, instituting credible retaliatory strategies or making cooperation history dependent by establishing memory preserving mechanisms (Seabright 1993).

The following have also been suggested:

- Scope-reduction, i.e. focusing on a distinct part of a larger problem (not on the integration of every conceivable aspect and scale as the current trend demands);
- Phased segmentation strategy, i.e. emphasizing that each individual's behaviour will determine whether or not the management goal is reached; and
- Education on social values and responsibility in order to enhance the value that an individual places on collective welfare above self-interest (Crance & Draper 1996).

A reservation with these suggestions is that although they address the need for cooperation, most of them constitute basically top-down, outcome-oriented strategies. I have proposed, instead, that a cooperation inducing CZM-process must pay attention primarily to the following three factors (Davos 1998).

1. Agenda setting and control

This is the process by which CZM-problems become legitimate concerns meriting the attention of the entire policy and fuel the competition for policy response among these concerns. A 'pluralistic' agenda setting that provides all the stakeholders with an equal opportunity to contribute should be expected to be more conducive to cooperation than an 'elitist' process that only allows for major initiatives to come from such power centres as government officials and policy-experts. Moreover, a 'systematic' or 'public' agenda that includes the full range of issues salient to all stakeholders should be expected to nurture a broader cooperation than a 'formal' or 'institutional' agenda consisting of issues that concern explicitly authoritative decision-makers. Hence, the analysis for CCZM should be sensitive to, and depend on, pluralistic and systematic agenda setting and control.

2. Value discourse

This refers to the debate on (a) what should be considered positive (benefit) and negative (cost) impacts of a CZM-solution and who should make this determination, i.e. the origin and meaning of values; and (b) how the benefits and costs of alternative CZM-solutions should be evaluated and integrated within the framework of a rule for ascertaining a preference ranking over these solutions, i.e., the application of values. Only a pro-active, well informed and constructive pub-

lic discourse could highlight all value differences and invite respect for their conflicting ramifications regarding CZM. Moreover, only by incorporating such discourse, the analysis for CCZM can identify ways with which the self interest may be guided to reconcile with its collective counterpart and the increasing value diversity may be channelled towards enriching instead of confusing the CZM-process.

3. Information and empowerment

This is concerned with the modalities of the relationship between power and knowledge and the management of the conflicts they generate. Only information that addresses the perceptions, concerns and capacity to access and assimilate it of diverse groups of on-line searchers of information could guarantee respect for the CZM-process and willingness to cooperate. Hence, the analysis for CCZM must seek the development of, and rely upon, such information.

Determining the feasibility of cooperation

Core analysis

The critical task of an analytical support system for CCZM is the normalization of the relationship between altruism and selfishness, i.e. between cooperative and self-interest motivated behaviour. This task can be handled by applying the tenets of Core theory (Tesler 1994). According to this theory, stakeholders will be willing to cooperate in CZM if, and only if, by doing so they can achieve an outcome at least as good as by acting alone - a condition referred to as collective rationality. Moreover, a stakeholder can join all other stakeholders in a grand coalition or only a number of them to form a single coalition, with each coalition placing a constraint on the collective choice of a final decision.

With respect to the decisions that can be reached by a collective effort, those that are unacceptable to a particular coalition because it can do better for its members can be categorized as 'dominated' decisions. The set of all undominated decisions constitutes what has been defined as the 'core' (Shapley 1953). The latter can be of course 'empty' when no undominated decision exists, it may contain a range of undominated decisions or it may consist of a single decision - for instance the choice of a grand coalition of all stakeholders.

Hence, a feasible, non-empty 'core' delineates in operational, analytical terms the boundaries of potential cooperation among stakeholders. Given a set of alternative CZM-solutions, the determination of the 'core' requires:

(1) knowledge of the preference ranking of these alternatives of all participating stakeholders that can be ascertained by applying anyone of a number of multi-criteria evaluation methods (Davos 1987); and
 (2) comparisons of these preferences as determinants of potential individual and collective choices, performed according to a number of approaches and criteria (Lejano & Davos 1995, 1999).

Coalitional analysis

It must be acknowledged that the analytical and computational requirements of a systematic CCZM may be insurmountable when the number of participating stakeholders is too large. One way to handle this problem is to perform a cluster analysis and group those stakeholders with statistically similar preferences into clusters that can be viewed as potential coalitions that could eventually be formed to support their top choices. The whole CCZM-analysis can, then, be consolidated to focus on these coalitions instead on individual stakeholders (Davos et al. 1993).

One important additional benefit of this consolidation relates to the need of managing the conflicts among core solutions in order to sustain stakeholder cooperation. The coalitional analysis extricates the conflict analysis from issues relating to the specific identity of stakeholders that may perpetuate existing rivalries and animosities. Showing a group of stakeholders that their preferences are the same or that their values lead to the same final choices of solutions should enable them to overcome any past perceptions of conflict among their interests and join forces to support their top choices. Moreover, the coalitional analysis offers an initial assessment of the extent of potential conflicts. The greater the number of potential coalitions with distinctly different priorities and preferences the more extensive the conflicts will be, requiring a more extensive resolution process and presenting greater challenges to nurturing sustainable cooperation. Finally, the coalitional analysis assists in the understanding of the dynamics of conflict management, i.e., which stakeholders support what, how strong is the potential coalitional support of various solutions and what potential compensation schemes may be devised to enhance willingness to cooperate.

Solidarity analysis

A third analysis that provides an important input to conflict and cooperation analysis is the assessment of the solidarity of cohorts of stakeholders declaring similar affiliations with special interest groups, e.g. 'labour and labour associations', 'tourist and other service sec-

tor associations', 'environmental associations' (Davos et al. 1993). Solidarity will be evident when statistical compatibility exists among the priorities or preferences of cohorts (i.e. when similarities in priorities or preferences are observed within, as well as among, groups of interests) or when identified potential coalitions contain stakeholders with similar blends of special interest affiliations. In most cases these findings will accompany each other.

Solidarity implies that the nature of the interest of a group (e.g. environmental, economic, public health) has a significant impact on the priorities or preferences of its members. Therefore, the authenticity of professed value differences among groups with high solidarity cannot be discounted by any conflict management effort, a condition that makes the whole conflict management task more difficult.

Compensation analysis

In addition to exploring the outcome and advantage of cooperation, core analysis (with or without coalitional and solidarity analyses) also assists in the consideration of 'compensation strategies' (side-payments) that certain coalitions of stakeholders may pursue to secure the agreement and cooperation of other coalitions. The basic requirement for this expanded analysis is to relate the cardinal preferences of all stakeholders in monetary or other terms. One way to achieve this is to follow the rationale of contingent valuation methods (see for instance Tunstall & Coker 1992) and directly ask the stakeholders to express their willingness-to-be-compensated for accepting solutions to which they assign a lower cardinal preference value than they attach to their first choice. This area of inquiry has not yet been adequately explored.

The identification of cooperative (effective) solutions

As I previously argued, in the real public policy arena, decisions are negotiated not 'made'. The above 'core' analysis supplemented with the coalitional (if deemed necessary), solidarity and compensation analyses provide most of the necessary information needed to assist the negotiations thus establishing a cooperative, process-oriented approach to CZM that engenders sustainable cooperation.

The problem of choosing among 'core' solutions, if there are several, better fits the objectives of conventional decision 'making' for an outcome-oriented, normative CZM. However, handling this problem will still be an analytical task if the stakeholders

demand a refereeing of their remaining differences reflected in the existence of more than one 'core' solution.

With the maximization of willingness to cooperate as the primary objective, the choice among 'core' solutions should be made with criteria that promote cooperation. Such criteria are those of fairness and justice. Since there is not a normative theory of justice that is universally acceptable, however, a choice must be made among several criteria with their merit inextricably linked to empirical considerations (Young 1994; Zajac 1995). One such criterion is that of 'nucleolus' which attempts to find a solution that is as 'centrally located' within the 'core' as possible (Schmeidler 1969; Lejano & Davos 1995, 1999). It's rationale is that of making each stakeholder's relative gain from the final choice as large as possible.

The VALCOAST Project

A number of the above ideas were pursued as major analytical objectives of a research project referred to as VALCOAST (Anon. 1997). It was carried out jointly by the Institutes of Marine Biology of Crete and Offshore Engineering of Heriot-Watt University, Edinburgh as well as the Universities of Gent and Valencia. The research instrument was a three-part questionnaire that was applied in four case studies: (1) the Flemish coastal zone (Belgium); (2) the Rethymnon coastal zone (Greece); (3) the Albufera coastal park (Spain); and (4) the Solway firth (United Kingdom). The first part of the questionnaire contained questions regarding the stakeholders' appreciation of the CZM-process as was conducted in general in their country. The second part comprised of similar questions but regarding the CZM-process as was carried out in their special case study area. The third part of the questionnaire incorporated questions probing the stakeholders' priorities for a number of criteria deemed appropriate for the evaluation of CZM-solutions.

The participating stakeholders were divided into officials (elected representatives or persons affiliated with governmental agencies having some sort of responsibility for CZM) and all other stakeholders. Both groups are collectively referred to as 'respondents'. Table 1 shows the total number and the distribution in each case study.

The following highlight some of the VALCOAST-

objectives relevant to the discussion in this paper and preliminary findings. I must emphasize that these findings relate only to the respondents to the VALCOAST-questionnaire. It is not consistent with the thesis of CCZM to seek the derivation of population values from sample values.

Willingness to cooperate

When cooperation is the focus of the CZM-analysis, it is reasonable to investigate first whether the stakeholders are willing to cooperate and how willing they expect all other stakeholders to be. What was found was that the participating stakeholders in Greece, Spain and the United Kingdom are willing to cooperate in both general and special cases. The opposite is true for the participating stakeholders in Belgium where all of them are unwilling to cooperate and, particularly with reference to their special case, half of them are totally unwilling to cooperate. On the other hand, it was interesting to find that the officials expect the stakeholders to be less cooperative than the latter indicate in both the general and special cases in all case studies with the exception of Belgium.

Moreover, stakeholders in Greece, Spain and the UK were found to be expecting others to be a little less willing to cooperate in the general case, but still their expectation was for all to be willing to cooperate. (This analysis is not relevant for officials because there is no valid concern for their 'self-willingness to cooperate'.)

Agenda setting

The respondents' attitudes towards issues relating to agenda setting were analysed in terms of the following variables:

- 'Receptiveness by the whole process of own input';
- 'Perceived receptiveness of others' input';
- 'Ease of understanding the CZM-process';
- 'Ease of learning institutional arrangements';
- 'Clarity of the communication of the objectives of CZM-solutions by the officials'; and
- 'Clarity of the presentation of the proposed solutions and their impacts by the officials'.

It was found that stakeholders in all four case studies did not expect to be heard by those responsible for CZM when they or the other stakeholders have suggestions to make either in general or for their case study area problems. On the other hand, officials believe that there is greater receptiveness of stakeholder input than the stakeholders do. More importantly, this differing perception is more evident in the special case.

Table 1. VALCOAST stakeholders.

	Belgium	Greece	Spain	UK
Stakeholders	42	16	103	69
Officials	49	24	47	32
Total	91	40	150	101

Regarding the ease of understanding the process, both stakeholders and officials in all case studies believe that it is quite difficult for stakeholders to assess it in the general and in the special case. The same applies for the ease of learning institutional arrangements. Moreover, most stakeholders and officials in all four case studies also believe that the communication of CZM-objectives by those responsible for CZM is not very clear in either case. However, officials appear to believe in higher clarity of objectives than the stakeholders do. The same applies for the clarity of communication of solutions and impacts.

Value discourse

Issues relating to the value discourse were analysed in terms of the following variables:

- 'Extent to which participatory CZM is sought and evaluation of the experience with it';
- 'Extent to which conflict management is performed';
- 'Equitability and effectiveness of conflict management mechanisms (courts, direct negotiation and bargaining, expert committees, market, national or local government, stakeholder committees)';
- 'Fairness of policy implementation instruments (charges, command and control, marketable permits, rights, subsidies) and their impact on willingness to cooperate'; and
- 'Utilization of cooperation agreements and evaluation of the experience with them'.

A noticeable difference was found in the assessment of stakeholders (lower) and officials (higher) of the extent to which participatory management is sought by those responsible for CZM in all case studies with the exception of UK. This was true for both the general and special cases. Regarding the evaluation of the experience with participatory management by those who had such experience, it did not appear to be very positive in any of the four case studies.

The same observations can be made in general by analysing the responses regarding the efforts by officials for conflict management, but in this case they hold for all case studies.

The mechanisms considered more equitable are 'courts', 'expert committees' and 'stakeholder committees' with 'free markets' clearly ranked the lowest. This observation is valid for both the general and special cases. There are considerable differences among the four case studies in the stakeholders' and officials' equability assessments, however.

The effectiveness of conflict management mechanisms appears to be judged more evenly than their

equability with 'local government' which was considered the more effective and 'free markets' the least effective mechanisms. There are, however, some significant differences among the four case studies and between stakeholder and official assessments of the various mechanisms. 'Command and control' appears to be regarded as the fairest policy implementation instrument followed by 'subsidies', 'charges' and 'rights' while 'marketable permits' are judged as neutral by most, perhaps because the experience with this instrument is still limited. Once more, certain significant differences in the stakeholder and official assessments exist among the four case studies and for certain instruments.

None of the policy instruments has a negative impact on willingness to cooperate with 'command and control' and 'subsidies' appearing to have the broadest positive impact. However, significant differences exist between stakeholder and official assessments as well as among case studies.

The current utilization of cooperation agreements and the experience with their application are ranked very low. However, the assessment of the effectiveness of a potential application of such agreements in the case studies is considerably higher. Regarding agreement between stakeholders and officials, it appears to exist only in two of the four case studies (Spain, UK).

Information and empowerment

The following variables were defined to analyse the respondent's attitudes towards the previously highlighted issues regarding information and empowerment:

- 'Level of own information';
- 'Level of others' information';
- 'Level of scientific indeterminateness';
- 'Level of conflict among other information sources'; and
- 'Empowerment, sensitivity of information to user assimilation capacity'.

Both stakeholders and officials considered themselves informed but not highly in both the general and special cases. The level of the others' information was also considered positive but not very high in all cases with the exception of Spain. Most respondents were ambivalent regarding the level of scientific indeterminateness. When the four case studies are compared, only in the special case do the stakeholders and the officials disagree regarding the level of scientific indeterminateness. On the other hand, the level of agreement in general information is considered negative by most of the respondents.

Negative or ambivalent is also the assessment of

most respondents of the sensitivity of available information to user assimilation capacity. For this assessment, there is no significant disagreement except regarding the special case where the stakeholders disagree with the officials in Belgium and Greece.

Willingness to cooperate and process appreciation

There appears to be no strong association between indicated willingness to cooperate and the assessment of factors relating to agenda setting, value discourse, and information and empowerment. The only notable exceptions are the following:

1. The stakeholders in Greece whose willingness to cooperate is not significantly affected by any particular factor in the general case but in the case of the CZM of their own area is affected by: (a) all factors of agenda setting; (b) the level of ‘own’ and ‘others’ information as well as the sensitivity of information to user assimilation capacity; and (c) the evaluation of the effort towards utilising cooperation agreements.
2. The officials in Spain who expect the stakeholders’ willingness to cooperate to be impacted by: (a) all factors of agenda setting; (b) evaluation of the effort for participatory management; (c) level of scientific indeterminateness and the sensitivity of information to user assimilation capacity; (d) evaluation of the effort towards conflict management; and (e) evaluation of the effort towards utilising cooperation agreements.

Evaluation criteria and their priorities

Several criteria were selected as appropriate for the evaluation of CZM solutions. They appear in Table 2 in the form of a ‘value tree’. The fact that during the pretesting of the questionnaire only minor variations were found to be necessary among the four case studies indicates that the VALCOAST-value tree provides a comprehensive reference point for all CZM-cases. For all case studies potential coalitions were identified using the respondents’ priorities for the value tree, derived with the ‘direct ratio’ method (Davos 1987). In all case studies, with the exception of Greece, there is one potential coalition comprised by the great majority of respondents (83% in Belgium, 76 % in Spain and 69 % in the UK). Moreover, this majority draws membership from officials and stakeholders in a rather balanced way (88% of all officials and 79% of all stakeholders in Belgium, 65% and 82% in Spain, and 68% and 69% in the UK). This observation indicates that limited conflict should be expected in the value debate among the respondents in these case studies. In Greece, the three potential coalitions are comprised of 41%, 27% and 32% of all respondents, pointing to a more conflict

laden value debate. The latter indication is highlighted further by the fact that the membership of these coalitions does not draw proportionally from the officials and stakeholders, for instance 42% of the stakeholders are drawn to the third coalition while only 17% of the officials are (for the other two coalitions the percentages are 43% officials and 39% stakeholders for the first coalition and 39% officials and 19% stakeholders for the second coalition).

Moreover, all three major coalitions in Belgium, Spain and the UK advance balanced priorities throughout the value tree with a slightly higher support for the branches of the ‘environmental sustainability’ in Spain and the UK and for ‘quality of life’ in Belgium. This finding implies that these coalitions can serve as an even more influential force when trying to resolve conflicts and sustain cooperation because in addition to the size of their membership they are not going to antagonize the other stakeholders with extreme positions. In the Greek case study, the examination of the priorities reveals that the value debate may not be so divisive as the clustering of the responses leads one to expect. The first and second coalition both assign their highest priority to ‘habitat loss’, ‘fresh water management’ and ‘traditional social networks’ although with differing emphasis. Solidarity analysis reveals that, in general, the solidarity of all cohort groups of stakeholders

Table 2. The VALCOAST value tree.

Economic development:	Employment level Productivity level Sectoral diversification
Environmental sustainability:	Environmental degradation Fishery sustainability Freshwater resource management Habitat loss Wildfowl sustainability
Equity:	Intergenerational equity Interpersonal equity Interregional equity Interspecies equity
Implementability:	Economic feasibility Enforceability International obligations Stakeholder acceptability Technological feasibility Time required to implement
Maintenance of traditional activities:	Cultural continuity Traditional economic activities Traditional social networks Traditional use rights
Quality of life:	Aesthetics Environmental quality Public health Urban congestion

in all case studies ranges from high to very high. Thus, for the cases of Belgium, Spain and the UK the conflict management task becomes even less difficult because the broad priority agreement indicated by the possibility of the formation of a large coalition draws group as well as individual support. The opposite can be said for the case of Greece, where the more even distribution of respondents among potential coalitions implies that both groups and individuals are divided for their priorities and, therefore, conflict management may be more difficult.

Conclusions and Reflections

I premised my discussion on the thesis that cooperative, process-oriented CZM (CCZM) can lead to more effective decisions (i.e., decisions that can achieve their targeted objectives within targeted time horizons) because it can engender sustainable cooperation among all those with a stake in their implementation. However, ideas need to be tested on their validity. The crucial test for CCZM is the stakeholders' willingness to respond to its call for cooperation. I emphasized that if for no other reason, stakeholders should be willing to cooperate when their self interest (the quintessential guide of outcome oriented CZM) is better served by cooperation with at least a subgroup of other stakeholders to form coalitions and lobby for their coalitional choice(s) – 'core' choice(s). The specifics of the VALCOAST case studies did not allow a complete demonstration of how an analytical support system can assist this juxtaposition of self and collective interests. The project did find, however, that most stakeholders in three out of the four case studies were willing to cooperate despite a negative evaluation of the current CZM-process. The fact that this finding may reflect an impact by the VALCOAST project (i.e. the impact that the issues raised by its questionnaire might have on the stakeholders' anticipation for changes in the CZM-process which, in turn, might make them more willing to cooperate) actually strengthens my thesis. I cannot help but pointing out how consistent with the present mentality of outcome-oriented CZM is the finding that the officials in Greece, Spain and the UK expected the stakeholders to be less willing to cooperate than they actually were.

Several other findings of the VALCOAST project raise issues of importance even for an outcome-oriented CZM. For example, it is bound to be eventually troublesome for the CZM-process and its sustainability objectives that stakeholders feel alienated with regards to the whole agenda setting process – as indicated by their low expectation of being heard by those responsible for CZM, their difficulty in understanding the process and its

institutional arrangements, as well as with their low assessment of the clarity with which the objectives of CZM and its solutions are presented to them. It is also problematic that officials believe that they are more receptive to stakeholder input than the stakeholders do, although they agree with them that the process is confusing and its conduct unclear. The same can be said for the noticeable difference of opinion between stakeholders and officials regarding the effort towards participatory management and conflict management. When the officials believe that they engage in such management but the stakeholders disagree, there can be only a long road open to all of them towards cooperation for effective CZM.

Any attempt to shift the current practice towards cooperative CZM can also benefit from some of the other findings of the VALCOAST project. For example, conflict management will be considered more equitable and will be expected to be more effective by the stakeholders if local governments facilitate it with the assistance of the courts as well as expert and stakeholder committees. The confidence in local governments adds support to the call for CCZM. Moreover, it appears that CZM-policies will be more effectively implemented with such instruments as 'command and control', 'charges' and 'subsidies' as well as with cooperation agreements among stakeholders rather than with market based approaches. A significant task for establishing the necessary preconditions for successful CCZM will also be to rectify the reality of stakeholders considering themselves as not very informed even when their special area is concerned and giving a low assessment of the sensitivity of current information to user assimilation capacity. Working towards reducing scientific indeterminacy and conflicts in the information disseminated by the various media should also receive a high priority.

With regards to the European Union, which stands at the apex of the CZM-process of its members, CCZM, instead of undermining this position, provides a framework for greater effectiveness in discharging its responsibilities. With CCZM, the challenge for the EU is not how to guide its members to determine 'best' solutions based on positivist, expert-based analysis, but rather how to better assist them improve the CZM-process and the proactive participation in it of all stakeholders.

Support for this premise is provided by the following syllogisms. How can prescribed solutions be expected to work when officials have different opinion as to what implementation instruments are the most fair and when the stakeholders disagree on the impact that the various instruments have on their willingness to cooperate? How can officials expect the stakeholders to cooperate when they admit that the whole process of

participation (particularly with regards to agenda setting) is not clear at all to stakeholders and the latter strongly concur? To a certain extent, the officials in this project also provide the answer with their expectation of stakeholder cooperation being less than that indicated by them. How decision rules such as comparisons of pecuniary estimates of benefits and costs (derived with such methods as contingent valuation) can be trusted to reveal the 'best' choice when the stakeholders: (a) admit that they are not so well informed; (b) emphasize the insensitivity of information to user assimilation capacity; and (c) are unable to judge the indeterminacy of scientific input. How can the adoption of market oriented approaches (justified by theoretical analysis but not by actual applications) be expected to be effective when the stakeholders doubt their fairness and ranked them low as incentives for cooperation? How can public education be expected to convince stakeholders of the superiority of expert-recommended solutions when it is possible to find stakeholders with similar expertise and professional orientation advancing competing priorities?

The only reassuring finding for those who may still believe that normative, outcome oriented CZM can be effective is that, for the time being, stakeholders appear to be willing to cooperate regardless of how they evaluate the CZM-process – although as I previously pointed out, this willingness may have been influenced by the anticipation that the VALCOAST project signals an improvement in the CZM-process along the lines of the issues it raises. However, taking advantage of this willingness will be more difficult for the EU if it attempts to design uniform policies for all its members, because of the limited correlation found among patterns of priorities for the evaluation criteria (potential coalitional priorities) in all four case studies. It is once more acknowledged that the findings that support these syllogisms relate only to the respondents to the questionnaire; however, the large number of these respondents allows the argument that they are going to have a considerable impact.

Finally, I admit that, although I address the challenges of a process-oriented CZM, I did not present evidence of any guarantee of this approach producing ultimately effective solutions. Regardless of whether such guarantee can be offered by any approach, to have attempted to do that would have meant, implicitly, adoption of an outcome-oriented mentality and this is what I tried to argue against in this paper.

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