Increasing the Efficency
of
Integrated Coastal Management

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1.   The Opportunity Today

Since the UNCED Conference in 1992, there has been a surge of interest in integrated coastal management (ICM) as the most promising response to the accelerating transformation of the world's coasts. UNCED succeeded in putting the importance of coastal change and coastal management on the agendas of the donor community and many national governments, nongovernmental organizations and universities. One recent count shows that in 1993 there were coastal management initiatives underway in 56 coastal nations and states, up from 13 in 1974 (Sorensen, 1993). Funding has increased dramatically. There has been a proliferation of documents setting forth the principles of ICM as a cross-sectoral, integrated approach to management and offering guidelines on the process by which such principles can be translated in a sequence of actions that can begin to move specific coasts to more sustainable, more equitable forms of development and a more accountable, transparent and effective decision-making process. The number of training programs designed to strengthen the capabilities of individuals and institutions in the practice of ICM has also mushroomed. The number of universities offering advanced degrees with a focus on coastal management has likewise increased and will doubtlessly grow even further.

IUCN has made major contributions to this flowering of interest and commitment to coastal management. Its members worked hard to promote coastal management at UNCED and the central office, prepared some of the first guidance documents, and has sponsored several of the field projects in developing nations that have pioneered the application of the ICM approach to specific sites. Most recently, IUCN participated actively in a GESAMP task force that examined the contributions of the social and natural sciences to ICM and, based on an examination of case studies, offers important recommendations on this crucial aspect of the practice.

Those of us working in the field of coastal management have every reason to be optimistic about the opportunities that surround us. But this is also a time when we must reflect on our roles and our strategies. What specifically are the objectives and strategies that IUCN should consider as the world's largest confederation of NGOs and

governmental institutions with a commitment to the advance of effective ICM? Now that the case for ICM has been successfully made and the transformation of coasts has been recognized as an issue of critical importance, what specifically should IUCN and its partners do?

While much has been accomplished, we should acknowledge that there are also some threats. We should not assume that the ICM trajectory will race forward from strength to strength without significant challenges or problems.

A Nightmare. I have been suffering from a recurring nightmare. It is of a major international conference sometime early in the next century, perhaps 2002. The topic is "Integrated Coastal Management, What Have We Accomplished?" and the conclusions are grim. The conference documents that much money has been spent by national governments, the donor community and NGOs. It catalogues an extraordinary proliferation of projects, programs and supporting initiatives that range across scales from local, national, regional and global initiatives—all justified as integrated coastal management. But it becomes painfully clear at the conference that there has been the extraordinary amount of reinventing of the wheel, that efforts have been conceived and implemented in unnecessary isolation, and that despite all the activity, the many formally adopted plans and weighty compilations of information, the measurable successes in reducing the problems that ICM programs individually and collectively have been designed to address is pitifully small. Where successes are real and well-documented in 2002, the scale is tiny compared to the magnitude of the problems. The conference finds that there has been great confusion over what to monitor, how to ascribe improvements to the efforts of ICM programs rather than other factors and little coherent testing of hypotheses. The absence of a common language or operational methodology makes it difficult to compare across projects and draw conclusions with any analytical rigor. The conference concludes that the cost-benefit ratio of ICM is unacceptable. The ICM process is declared inefficient and needlessly complex. The consensus is that it's time to move on to something else.

This is indeed only a nightmare. But it is a potential tragedy that IUCN can help avoid with clear-headed leadership and long-term commitments to those ICM initiatives that show real promise. The key, in my view, is to accept the endlessly argued and much repeated statements of the problems that ICM must address and the principles governing an appropriate response and proceed with a focus on the <u>efficiency</u> by which ICM initiatives move forward and <u>learn</u>, as they work to address real problems. The experience and the knowledge that can make my nightmare no more than a bad dream is available to us. IUCN can play a critical role in assuring that it is recognized and acted upon. IUCN's commitment to an approach to ICM based on learning and quality can provide it with a unique and important niche in the next critical stage in the evolution of ICM.

2.   What Have We Learned?

The essence of ICM is known but not easy to translate into efficient, strategically sound action tailored to the unique needs of a specific place. Most would agree that ICM is evolving towards being a form of ecosystem governance. The term ecosystem implies an overt, systems approach in which human societies are viewed as one element of the planet's living systems. The focus is therefore upon coherent, self-defined and self-organizing units comprising interacting ecological, economic and social components. Defining the ICM enterprise as ecosystem governance conveys an integrated, macro view of problems and opportunities that works to build the conceptual bridges between long-term expressions of anthropogenically-induced change at local and global scales and the short-term focus of coastal governance programs as they exist today. The term governance most accurately defines the endeavor because ICM is concerned with setting fundamental societal goals and with the design of new institutional structures and processes. Management, on the other hand, refers to the more straightforward process of harnessing the necessary human and material resources to achieve with pre-existing structures a set of existing goals. However, since the term management is so widely used and is accepted in the acronym ICM, I will use the more familiar term in this document.

The recent report by GESAMP to which IUCN made major contributions stated the goal of ICM as follows:

> The overall goal of ICM is to improve the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems ... It is a process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources.

> Expressed in this way, the goal of ICM is clearly consistent with national and international commitments to sustainable development for all environments (terrestrial and marine), from the headwaters of catchments (watersheds) to the outer limits of exclusive economic zones ...

The challenge for ICM practitioners is to make progress towards this goal in specific and tangible terms that are appropriate to geographically specific coastal sites. This definition conveys ICM's emphasis upon balance. Quoting again from GESAMP:

> ICM is a continuous and dynamic process that ... requires the active and sustained involvement of the interested public and the many stakeholders with interests in how coastal resources are allocated and conflicts are mediated. The ICM process provides a means by which concerns at local,

regional and national levels are discussed and future directions are
negotiated.

3. Some Major Sources of Inefficiency

Muddleheadedness On Goals, Objectives and Strategies. A major difficulty for those
who worked in developing nation settings in the 1980s, and a significant source of
inefficiency, has been in differentiating—in a meaningful operational sense—between the
goals, objectives and strategies of individual coastal management efforts. Coastal
management in the tropics has had to tackle powerful forces of coastal change in a
context of weak institutions and often prevailing poverty. The first priority is often to
overcome an anarchic process of development and to invent forms of governance that are
far more ambitious than the largely regulatory responses to shorefront development
problems addressed by coastal zone management programs like those that took shape in
the U.S.A. in the 1970s and early '80s. The developed and developing nation contexts
are very different and the goals, objectives and strategies that are appropriate and feasible
in each must also be very different. Yet we tend to take objectives and strategies that
have proved effective in developed nation settings and transfer them to developing nation
settings. This doesn't work and is therefore not efficient and sometimes even destructive.

Another related major reason for inefficiency is the universal reluctance to recognize that
for the most majority of coasts, and especially those where ICM is most urgently needed,
attainment of the fundamental goal will require a sustained effort spanning many decades.
Significant progress towards that goal can, and must, be made in much shorter periods.
Herein lies the critical importance of selecting the appropriate objective for the typical
five or ten-year project. The GESAMP report outlines a simplified version of the familiar
cycle of issue identification, planning, adoption, implementation and evaluation through
which programs should proceed. Each completion of a cycle, or generation of an ICM
program, typically requires ten to fifteen years. Each generation should move closer to
the ultimate goal as a program gains strength and experience and takes on additional
issues and increases the geographic scope of its efforts. Longer term efficiency is most
likely when the objectives for each generation are realistic and designed to build on the
experience that already exists.

Breaking the Sequence of Stages. ICM is a dynamic and iterative process. Some
programs that have survived an initial generation and moved onto a larger agenda have
not followed the sequence of stages recommended by GESAMP. Changing the sequence
of the five stages is sometimes unavoidable. But if our concern lies with efficiency, it
should be obvious that enacting a law and selecting the administrative structures for a
program (Stage 3) should come after an analysis of the issues the program should
address—not before. If the order of the stages is changed, backing and filling—through
amendments and revised institutional design—is inevitable, and this is inefficient.
Similarly, a full-scale stage of planning and policy definition (Stage 2) is most likely to be
appropriately focused and responsive to local needs if it is preceded by a separate and
distinct stage of issue assessment that is based on existing information (Stage 1). An

initial focus on existing information forces the ICM practitioner to listen, to emerge with those who already know the area in question and often have important insights into what the nature of the issues and what actions are feasible.

Poor Judgments on Institutional Capacity. We live in a global consumer-driven society that favors quick results and products that are consumed and replaced with something else. Yet if we are serious about the fundamental goal of ICM programs—to achieve that more sustainable balance between human society and nature at significant scales—it is obvious that sustained efforts are required to build the institutions that are capable of ICM practice and able to grow in strength over many decades. Yet, the major limiting factor to sustained progress, particularly in the tropics where both the needs and the pace of ecosystem change is greatest, is usually the capacity of the institutions involved. The institutions that are essential to sustained improvements in ICM span the governance procedures by which decisions are made by unpaid village leaders, the efforts of nongovernmental organizations, the business interests that are at the core of forces of the change that favors or work against ICM's goal, and of course, government agencies.

Unfortunately, the experience of the donor community in institution building has not been positive. Both the World Bank and USAID, in studies that ask similar questions using different methodologies have concluded that their success rate in institution building within governments has been poor. It is therefore hardly surprising that institution building within governments is not popular among the donors. Building effective and efficient institutions that lie outside of government, that can demonstrate their effectiveness in supporting ICM is also wracked with problems. But strengthening institutions both inside and outside government is essential and cannot be avoided. We are currently both misreading institutional capacity and failing to make the necessary investments. This leads to projects with geographic scales that are too big and time frames that are too short. Readjusting these scales during an ongoing ICM initiative is another major source of inefficiency.

Ownership and Participation. ICM programs must be built place by place and will only be sustained if they are owned by the people that are most immediately responsible for them and affected by their actions. The emphasis on participation and building the constituencies that understand and support the values and goals of ICM is based on the recognition that a society must believe in an ICM program if it is to make the changes in behavior that progress towards ICM's goal requires. Our anxiety that it is already too late and our desire to move quickly often leads to an over-reliance on outside experts and to forms of participation that are peripheral rather than central to each stage in the evolution of a project or program. Outside experts (be they from a foreign country or a distant capital city) are often essential to the success of a first generation of ICM. But the ownership of ICM programs must live with the people and institutions of a place if the effort is to be sustained. IUCN has struggled with these challenges and those of us who have worked in a diversity of settings know that this is a form of balance that is difficult to strike and difficult to maintain. The challenge is to balance the need to successfully meet a set of project outcomes with the need to build local capacity and the local will to

advance towards the ultimate goal. Too often, short-term project imperatives—the data set, x many training sessions, and the plan, become ends and not means. Herein lies another major source of inefficiency in making sustained progress towards the goal.

Understanding the Roles of the Sciences. Good management and good science are not one and the same. The GESAMP effort focused specifically on the contributions of the social and natural sciences to coastal management. Here past experience is particularly rich in frustration and inefficiency. The GESAMP report offers useful guidance and the key message is simple, but seldom followed:

> Despite great differences in the social, economic and ecological conditions in countries ..., there is remarkable consistency in the lessons learned about the contributions of science to ICM. They demonstrate that scientists and managers must work together as a team if scientific information generated for ICM is to be relevant and properly applied for management purposes. Since the two professions have different perspectives and imperatives and approach the solution of problems differently, the objectives and priorities for programs must be derived, tested and periodically re-evaluated by scientists and managers working together.

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> The management of complex ecosystems subject to significant human pressures cannot occur in the absence of science. The natural sciences are vital to understanding ecosystem function and the social sciences are essential to elucidating the origin of human-induced problems and in finding appropriate solutions.

The GESAMP report details the specific roles and contributions of natural and social scientists to each of the five stages in the ICM process and illustrates the difficulties—and some notable successes—through four case studies drawn from both developed, and developing nation settings.

Management is a value-driven enterprise concerned with ethics, equity, hope in the future and trust in the process by which decisions are made. Good management sets its priorities and grounds its decisions on the best scientific information and scientific knowledge. Thus, successful ICM requires mixing good politics with sound science—another form of balance. Some ICM programs have focused too much on peripheral "science" and too little on governance process; others have done the reverse. The result is needless, predictable, inefficiency. We should now know enough to do better.

Recommended Priorities for IUCN

IUCN can provide leadership in responding to these sources of inefficiency by setting specific priorities for its contributions to both the theory and the practice of ICM.

Recommendations for Contributions to the Theory of ICM

(1)   A Common Methodology for Learning From ICM Practice. Perhaps the most strategic approach to promoting greater efficiency in the refinement of ICM theory is to formulate and apply a common methodology for learning from our collective experience. Once developed, this common framework needs to be applied through both a commitment to self-assessment and adaptation within individual ICM initiatives as well as independent evaluations by external parties. The current reality is that ICM initiatives are poorly documented, there is much reinventing of the wheel and the dissemination of experience, if it occurs at all, is improvised and superficial. A common methodology would enable us to analyze with greater rigor the rapidly increasing number of ICM experiments in an ever-widening diversity of settings. This will require that baseline conditions are documented and that variables most relevant to the objectives of each initiative are monitored. All those involved would need to play close attention to how the goals, objectives and strategies of individual ICM initiatives are defined. A common methodology would encourage explicitly stating the hypotheses that underlie a project's objectives. Only when these fundamentals of project design are being articulated with sufficient rigor and with terms understood by all, can the indicators that must be monitored be selected. The purpose, however, is not to impose a heavy-handed and expensive set of procedures and constraints on hard pressed field projects. It is rather to make explicit why we design and administer projects and programs the way we do and thereby increase the efficiency by objectively learning what works, what doesn't and why. There is much to be learned from the experience of more mature fields, such as public health, that can guide us in this process.

(2)   Application of the ICM Methodology to Related Endeavors. A review of the proceedings of recent conferences and workshops on fisheries, land-based sources of marine pollution and large marine ecosystems reveals that those working in these fields are looking to ICM as a model for an integrated, participatory and strategic approach to resource management. The many ICM guidance documents, including the GESAMP report, set forth the different stages of the ICM process and the operational procedures by which the principles of a participatory process and integrated design can be translated into effective action. It would be useful if IUCN were to select a few specific fisheries and large marine ecosystem (LME) initiatives and design them explicitly to follow the ICM approach. For example, the LME approach, as currently practiced, begins by a period of research on questions known to be critical to understanding the functioning of the ecosystem in question. The ICM approach, as set forth by GESAMP, would begin by defining in Stage 1, the management issues as they emerge from a careful assessment of existing knowledge on (1) the condition of the ecosystem(s) in question, (2) the policy and institutional context, and (3) the development context. When managers and scientists begin working together as a team from the outset the efficiency of the enterprise is likely to increase. This should be treated as a hypothesis and tested in one or more LME initiatives. Similar applications of the ICM method to specific fisheries management initiatives are probably already underway. They need to be documented and critically

examined as an explicit experiment in applying a new methodology and approach to a set of issues that have been particularly rich in management failure.

(3)   A Representative Set of ICM Experiments. It could be instructive, and increase the efficiency by which we collectively learn the practice of ICM, if IUCN and its collaborators selected a set of programs representative of the diversity of coastal settings. While the IUCN's global network of marine protected areas represent a range of ecosystem types a parallel global set of ICM settings should focus upon institutional/cultural/economic diversity. There is much debate over what objectives, strategies and ICM practices are appropriate and feasible in such diverse settings as Papua New Guinea, Ecuador, Singapore or Spain. Tracking and analysis of a representative set would yield instructive insights if such analysis was built into the design of such programs and not left to a post-hoc review.

Recommendations for ICM Practice

(1)   A Learning-Based Design of Projects and Programs. While a common methodology for learning and evaluation requires a measure of debate and consensus building on conceptual frameworks and specific analytical instruments much can be accomplished project by project when the design is overtly learning based. Once goals, objectives and strategies are made explicit through a process that involves the local communities and the local institutions affected as well as the project staff, a commitment to self-assessment, and therefore to learning and strategic behavior, can be woven into the fabric of all ICM initiatives. Space can be created in all ICM projects and programs where all those involved can periodically critically examine the objectives, strategies and structure of their program. Annual reviews of the preceding year's objectives, what was and was not accomplished, how the context has changed and, based on such open and participatory group learning, setting the priorities for the next year can do much to promote a learning-based approach to ICM practice. Training and public education activities are most effective when they engage those involved in a process that relates to their own experience and knowledge rather than being dyadic.

(2)   A People-Centered Approach. From a management perspective perhaps the most important attribute of coastal regions is that they have become the primary habitat for our species. It should be obvious that ICM is concerned first and foremost with managing people, with the long process of reinforcing or changing established societal behaviors and values and therefore with shaping institutions. But there are many examples of ICM initiatives where this basic reality appears to be forgotten or pushed aside. IUCN can do much in providing the leadership that reminds and reinforces that ICM is indeed a people-centered enterprise. One expression of this is ICM's pioneering work in participatory management. IUCN can help develop and disseminate practices that assure that the people and institutions affected by specific ICM initiatives are involved in all stages of the ICM process. Programs and projects must be owned by the societies in question, not by the outsiders who may provide the funds and expertise to get

an initiative underway. This is always a difficult balance and one that too often is not made successfully.

The commitment to building human and institutional capacity, and investing in public education must not waiver. Our concerns for biodiversity, for the protection of critical habitats and the conservation of the important qualities of coastal ecosystems can lead us to devote too little attention to the needs and the values of the people who are central to both the problems and their solution.

(3)   The Documentation of Trends. We have barely scratched the surface of documenting trends in the condition and use of coastal ecosystems. Thanks to the efforts of ICLARM a global database on coral reefs has been developed that includes social and governance variables as well as ecological variables. But data on the issues most central to ICM programs is usually of very uneven quality, has been gathered for a great variety of purposes and hence is often of limited use in informing a management effort. Here again, a first step is to agree on what data would be most useful and to begin generating information through individual projects and programs in a manner that allows comparison among sites and become a better basis for estimating trends at larger scales.

(4)   Specific and Tangible Visions for the Future. Finally, efficiency in the practice of ICM will increase when we work to prepare explicit scenarios for the desired future qualities of the specific places in which we work. Such "visions for the future" must be articulated in specific terms. With the people of each place we must struggle to define in tangible terms what it really is that we are attempting to achieve not just through a project but as an ultimate goal. The concept of "sustainable forms of development" must be made real. The power of ICM lies in its dedication to integrate conservation with development, equity with governance practice, immediate needs with long-term goals. We must accept that the primary human habitat will be increasingly shaped by the actions of human society. We must have the courage to enunciate in specific, pragmatically achievable terms what it is that we are working to achieve place by place.

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