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ABSTRACT

Integrated coastal management (ICM) seems to be the obvious choice for small island developing states (SIDS) in the Caribbean that aim for sustainable development. The Code of Conduct for Responsible Fisheries, available globally for voluntary adoption since 1995, is promoted by the Food and Agriculture Organisation of the United Nations (FAO). Article 10 of the Code addresses the integration of fisheries into coastal area management. It deals with institutional frameworks, policy measures, regional cooperation and implementation of ICM. Observations in some of the small islands of the Caribbean suggest that while progress has been made, there is still a long way to go. Some of the challenges include public administration, representation of stakeholders, and issues of power and equity. These are in addition to the technical and scientific challenges surrounding multiple uses of natural resources. The Coastal Management Research Network (COMARE Net) of the University of the West Indies is one of the several recent initiatives that attempt to improve the practice of integrated coastal management in the region.

KEY WORDS: Coastal, fisheries, integrated, management

Integración de Pesquerías en Manejo Costero

Manejo costero integrado (MCI) parece ser la opción obvia para las pequeñas islas estados en vías de desarrollo del Caribe, que apuntan hacia un desarrollo sostenido. El Código de Conducta para la Pesca Responsable, accesible globalmente para su adopción voluntaria desde 1995, es promovido por la Organización para la Alimentación y Agricultura de las Naciones Unidas (FAO). El artículo 10 del Código trata sobre la integración de pesquerías en manejo de zona costera. Se relaciona así mismo, con marcos institucionales, políticas, implementación y cooperación regional de MCI. Observaciones realizadas en las pequeñas islas del Caribe sugieren que mientras ha habido progreso, aun queda un largo camino por recorrer. Algunos de los retos incluyen la administración pública, representación de accionistas, asuntos de poder y equidad. Todo esto se agrega a los retos técnicos y científicos alrededor de los usos múltiples de los recursos naturales. La Red de Investigación de Manejo Costero (COMARE Net) de la Universidad de West Indies es una de las recientes iniciativas que pretende mejorar la practica de manejo costero dentro de la región.

PALABRAS CLAVES: Costero, pesquería, integrada, manejo

INTRODUCTION

Integrated coastal management (ICM) seems to be an obvious choice for the small island developing states (SIDS) in the Caribbean that aim for sustainable development. An entire island nation may constitute a continuous coastal zone or area because of its small size. Integrated coastal management (and similar terms) have been described as:

“...a continuous and dynamic process by which decisions are taken for the sustainable use, development, and protection of coastal and marine areas and resources. ICM acknowledges the interrelationships that exist among coastal and ocean uses and the environments they potentially affect, and is designed to overcome the fragmentation inherent in the sectoral management approach. ICM is multi-purpose oriented, it analyzes and addresses implications of development, conflicting uses, and interrelationships between physical processes and human activities, and it promotes linkages and harmonization among sectoral coastal and ocean activities” (Cicin-Sain and Knecht 1998).

Fishing is one of the most obvious, and sometimes locally or nationally important, sectoral activities along the coasts of Caribbean countries. It uses space offshore for fish harvesting and onshore for harvest support as well as the postharvest steps leading to domestic seafood consumption or for export. Many user groups from other sectors of the economy and society also place demands on coastal and marine areas. International policy instruments such as Agenda 21 and the Small Island Developing States Plan of Action (SIDS-POA) emphasise the need for ICM.

Among such instruments, however, it is primarily the Code of Conduct for Responsible Fisheries, promoted by the Food and Agriculture Organisation of the United Nations (FAO), and available globally for voluntary adoption since 1995, that specifically addresses how fisheries should be integrated into coastal management. Here the term “management” encompasses both conservation and development. Article 10 (see Appendix for the full text) of the Code of Conduct for Responsible Fisheries (FAO 1995) addresses the integration of fisheries into coastal area management. It deals with institutional frameworks, policy measures, regional cooperation and implementation of ICM.

This paper examines the recommendations set out in the Code. It places the Code in the context of examples of ICM in the Caribbean with a view to learning how integrated coastal management can be improved. I provide perspectives under the headings of Article 10, illustrated with information from recent research. Sharing information on coastal management research, and promoting such research, is a goal of the Coastal Management Research Network (COMARE Net) of the University of the West Indies (UWI). COMARE Net is an outreach initiative of the UWI Office of Research.

INSTITUTIONAL FRAMEWORK

In Article 10 of the Code key points on the institutional framework are:

- i) Appropriate policy, legal and institutional framework for social-ecological sustainable utilisation,
- ii) Representation of fishing interests in coastal area decision-making,
- iii) Retain customary practices, rights of access and use where feasible,
- iv) Adopt fishing practices that avoid conflict among all coastal users, and
- v) Establish procedures for conflict management within administration.

Social-ecological sustainable utilisation demands that resources are used in a sustainable manner to ensure that ecosystems and social systems thrive. The multidimensional framework required to achieve this should be part of governance arrangements for Caribbean coastal and marine resources (Chakalall, Mahon and McConney 1998). In Barbados, the Coastal Zone Management Act acknowledges the precedence of the Fisheries Act in establishing plans for the management of fishery resources outside of designated marine protected areas (MPAs). The Coastal Zone Management Unit is represented on the policy-level Fisheries Advisory Committee (FAC), the fishery sector's primary consultative comanagement body with multi-stakeholder membership (McConney, Mahon and Oxenford 2003).

Fisheries sector workers, fisheries authority and coastal management authority all serve on the Barbados FAC, but there is no permanent ICM body yet established that includes fishing interests. There is the integration of coastal management into fisheries instead of the reverse. The institutional arrangements for coastal management in Belize, and the Fisheries Advisory Board, are also developed to provide an integrated structure from policy-making to community-level, and fishing interests are represented especially by the fishing cooperatives (McConney et al. 2003).

The beach seine fishery in Grenada provides a case study on retaining customary practices and fishing rules, with recommendations from fishers for incorporating these institutions into the conventional fishery regulations (McConney 2003). Regarding rights of access to coastal areas above the high water mark, fishers in many locations are finding themselves excluded from private properties that were customarily available to them for boat repair and fishing operations. More properties are being developed for local residential or tourism purposes. Beach erosion narrows the area available to fishers even further, strengthening the need for integrating fishing into physical planning. Garaway and Esteban (2003) note that planning needs to be especially comprehensive and participatory for marine protected areas.

In the Grenada beach seine case, fishers were concerned about fishing and boat mooring areas disrupting coastal traffic (McConney 2003). Where disputes arose about the fishing rules, the fisheries authority stepped in to resolve or manage the conflicts. Fishers have proposed that a civil arbitration body be established to handle such incidences in the future when the intervention of the fisheries authority is not sufficient. Coastal conflicts between fishing and tourism feature prominently in the case of fishing and whale-shark

encounters competing for space along the barrier reef of Belize (Pomeroy and Goetze 2003). Procedures for conflict management are set out in McConney, Pomeroy, and Mahon (2003).

POLICY MEASURES

In Article 10 of the Code key points concerning policy measures are:

- i) Public awareness for conservation and participatory management,
- ii) Resource valuation including economic, social, and cultural factors,
- iii) Policy decision-making takes risks and uncertainties into account,
- iv) Coastal monitoring using physical, chemical, biological, economic, and social parameters, and
- v) Multi-disciplinary research on environmental, biological, economic, social, legal and institutional aspects of coastal management.

The Barbados Sea Turtle Project is an example of integrating fishery and coastal management in which public awareness of conservation, and for encouraging participation, is key. Public education has assisted in ensuring a high level of compliance with the regulations that have closed the fishery, and resulted in a high level of participation in conservation efforts by a wide cross-section of the population (<http://barbadosseaturtles.uwichill.edu.bb>).

Comprehensive coastal and marine resource valuation is recent, and still rare, in the insular Caribbean. The related area that is receiving more attention concerns sustainable livelihoods and pro-poor approaches to coastal research and management (Smith 2001, Smith and Renard 2002, Pantin et al. 2004, Renard et al. 2000). These approaches place resource values in a very practical context integrated with quality of life and well-being, and within a framework of institutional analysis (Garaway and Esteban 2003, Butler 2002).

The trends towards ecosystem-based fishery management and use of social-ecological system concepts are still in their early stages in the region. However, risk and uncertainty are important aspects of these perspectives. Using trade-off analysis, Brown et al. (2001) address coastal decision-making that confronts those engaged in participatory management. Risk and uncertainty require more attention in regional coastal management research. Many coastal development decisions have the potential to marginalise fisheries, often for perceived tourism benefits. They are not easily reversible and there is little physical space for errors.

McConney, Mahon, and Parker (2003) discovered that uncertainty (ecological and institutional) is a factor that hinders co-management of the sea urchin fishery in Barbados. It seems to be less of a factor in St. Lucia in the same fishery (Smith and Koester 2001, Burt 2002). One of the greatest areas of risk and uncertain related to enforcement of fisheries regulations and penalties. Fishers may find it harder to cope with legal-institutional uncertainties concerning power and equity issues.

Coastal monitoring received a boost from the Caribbean Planning for Adaptation to Global Climate Change (CPACC) project. A wide range of monitoring parameters were included, but only in some locations where the coastal authority and fisheries authority were the same or closely linked, did

fisheries play a prominent role in the monitoring programme. Other projects, such as by the Caribbean Natural Resources Institute (CANARI), have also paid attention to coastal monitoring (e.g. Hutchinson 2001, Smith 2003).

Recently the Centre for Resource Management and Environmental Studies (CERMES) of the University of the West Indies (UWI) has led an initiative known as SocMon Caribbean (Socioeconomic Monitoring for Coastal Monitoring in the Caribbean) that aims to include all coastal uses within its monitoring regime. Some papers to be presented at this conference use this methodology (e.g. Joseph in Nicaragua and Gibson et al. in Belize). This is a new and growing area of coastal management research.

Multidisciplinary, interdisciplinary or transdisciplinary research is vital for coastal management (Visser 2004). Such research is being undertaken at CERMES and other organisations in the region. However, when compared to research in other regions (e.g. Boissevain and Selwyn 2004) the body of work on Caribbean tourism interactions with fisheries is surprisingly small and focused mainly upon bio-physical aspects or conflicts. It is rare to see research directed at how fisheries can enhance tourism if fully integrated into coastal management (Clauzel and Joyeux 2001).

REGIONAL COOPERATION

In Article 10 of the Code, points concerning regional cooperation are:

- i) States with neighbouring coasts should cooperate in management,
- ii) Transboundary issues require good communication and consultation, and
- iii) Scale of cooperation should be appropriate for most effectiveness.

Several United Nations (UN) agencies have fisheries, coastal and marine programmes and projects in the Caribbean. The Caribbean Environmental Programme (UNEP-CEP) has the potential to integrate fisheries and coastal management, but this has not yet occurred. The English-speaking Caribbean has recently established an indigenous regional fisheries body: the Caribbean Regional Fisheries Mechanism (CRFM). It is located in Belize, along with the Caribbean Community Climate Change Centre (CCCCC). This proximity may foster greater integration. At the sub-regional scale, the Organisation of Eastern Caribbean States Environmental Sustainable Development Unit (OECES-ESDU) houses both the fisheries and coastal management desks. In small countries the close proximity of agencies is important for the creation of critical masses of expertise under conditions of low capacity and inadequate communication.

The regional and international organisations listed above can facilitate transboundary communication and consultation at appropriate scales. However, barriers occur since the fisheries and coastal management stakeholders (both governmental and non-governmental) seldom share the same forums. There is no body set up yet to span the inter-agency divides that prohibit the integration of fisheries into coastal management at a regional scale. The most promising initiative in this regard may be institutional arrangements arising from attempts in the UN to have the Caribbean declared a special area.

However, this does not meet the immediate need for integration of fisheries into coastal management.

IMPLEMENTATION

In Article 10 of the Code of Conduct for Responsible Fisheries, the key points concerning implementation are:

- i) National coastal authorities involved in planning, development, conservation, and management need to cooperate and coordinate, and
- ii) Fisheries sector representatives must have the appropriate technical capacities and financial resources.

The points from the previous section bear repeating here. In addition, it still appears that authorities are reluctant or unable to fully and effectively utilise cost-effective means of electronic communication for conducting business. E-groups, e-mail, e-conferencing, web pages, and the like are not routinely employed to boost interactive productivity at any scale, especially for fisheries and coastal managers to collaborate. Perhaps the enhanced communication efforts of the Gulf and Caribbean Fisheries Institute (GCFI) can assist in improving this situation, but changes in attitudes on data-sharing and pooling, joint problem-solving and the like are also required.

As highlighted in the Small Island Developing States Plan of Action (SIDS-POA), building capacities of coastal and marine management stakeholders is of high priority. For example, fisherfolk organisations in Barbados are eligible to receive small grants from government to acquire technical and financial resources. Technical expertise is offered through organisations such as CERMES and CANARI to build the capacities of NGOs in the region. However, NGOs seldom take full advantage of such opportunities, and governments are not always sufficiently supportive.

DISCUSSION AND CONCLUSIONS

Fisheries management and coastal management are becoming more participatory, comprehensive, and compatible. Recognising social-ecological systems and using ecosystem-based management are features in common. However, the integration of fisheries into coastal management, as promoted by the Code of Conduct for Responsible Fisheries, has not proceeded altogether smoothly in the Caribbean. This is mainly due to structural and institutional barriers in the governance and administration of coastal and marine resources. Change agents are urgently needed.

Coastal management is seen in many places as a part of environmental management while fisheries is seen primarily, in SIDS especially, as one of the “productive sectors” like agriculture and manufacturing. Consequently, despite some similarity in outlooks and approaches at technical level, there is the lingering perception among some fisheries stakeholders that coastal management inevitably means greater regulation of fisheries and marginalisation of fishing in favour of tourism or other types of development. Fisheries stakeholders may consider that as the traditional users of coastal areas they

have done more to accommodate the needs of coastal management and development than the reverse.

Recent publications provide insight on how the frameworks for successfully (co-)managing coastal resources may be structured (Brown et al. 2002, McConney et al. 2003). Further research is required to assist the advancement of coastal management in the Caribbean, and the role that fisheries may play in this process. Promoting and disseminating such research is a goal of the Coastal Management Research Network (COMARE Net), an outreach initiative of the University of the West Indies (UWI) Office of Research.

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LITERATURE CITED

- Boissevain, J. and T. Selwyn. (eds.) 2004. *Contesting the Foreshore: Tourism, Society and Politics on the Coast*. MARE Publication Series No. 2. Amsterdam University Press, Amsterdam. 320 pp.
- Brown, K., E. Tompkins, and N. Adger. 2001. *Trade-off Analysis for Participatory Coastal Zone Decision-making*. Overseas Development Group, University of East Anglia. 109 pp.
- Brown, K., E. Tompkins, and N. Adger. 2002. *Making Waves: Integrating Coastal Conservation and Development*. Earthscan Publications, London, United Kingdom. 164 pp.
- Burt, M. 2002. A study of the social and economic impacts of sea urchin harvesting in 2002 in Laborie, St. Lucia. CANARI LWI Project Document no. 7. CANARI Technical Report no. 318. Caribbean Natural Resources Institute, Vieux Fort, Saint Lucia.
- Butler, C. 2002. Assessing marine resources: institutions and institutional development in Laborie, St. Lucia. CANARI LWI Project Document no. 6. CANARI Technical Report no. 305. Vieux Fort, Saint Lucia: Caribbean Natural Resources Institute.
- Cicin-Sain, B. and R.W. Knecht. 1998. *Integrated Coastal and Ocean Management: Concepts and Practices*. Island Press, Washington, DC. USA. 517 pp.
- Chakalall, B., R. Mahon, and P. McConney. 1998. Current issues in fisheries governance in the Caribbean Community (CARICOM). *Marine Policy* **22**: 29-44.
- Clauzel, S. and Joyeux, G.. 2001. Tourism in Laborie, St. Lucia: baseline study and identification of potential for development. CANARI LWI Project Document no. 3. CANARI Technical Report no. 293. Caribbean Natural Resources Institute, Vieux Fort, Saint Lucia.

- FAO. 1995. *Code of Conduct for Responsible Fisheries*. FAO, Rome, Italy. 41 pp.
- Garaway, C. and N. Esteban. 2003. *Increasing MPA Effectiveness Through Working with Local Communities: Guidelines for the Caribbean*. MRAG Ltd., London, United Kingdom. 45 pp.
- Hutchinson, G. 2001. Water quality in the Laborie Bay. CANARI LWI Project Document no. 5. CANARI Technical Report no. 301. Caribbean Natural Resources Institute, Vieux Fort, Saint Lucia.
- McConney, P. 2003. Grenada case study: the legalisation of beach seine traditional rules at Gouyave. Caribbean Coastal Co-management Guidelines Project. Caribbean Conservation Association, Barbados. 70 pp.
- McConney, P., R. Mahon, and C. Parker. 2003. Barbados case study: The sea egg fishery. Caribbean Coastal Co-management Guidelines Project. Caribbean Conservation Association, Barbados. 74 pp.
- McConney, P., R. Mahon, and H. Oxenford. 2003. Barbados case study: the Fisheries Advisory Committee. Caribbean Coastal Co-management Guidelines Project. Caribbean Conservation Association, Barbados. 77 pp.
- McConney, P., R. Mahon and R. Pomeroy. 2003. Belize case study: Fisheries Advisory Board in the context of integrated coastal management. Caribbean Coastal Co-management Guidelines Project. Caribbean Conservation Association, Barbados. 70 pp.
- McConney, P., R. Pomeroy, and R. Mahon. 2003. Guidelines for coastal resource co-management in the Caribbean: Communicating the concepts and conditions that favour success. Caribbean Coastal Co-management Guidelines Project. Caribbean Conservation Association, Barbados. 56 pp.
- Pantin, D., D. Brown, M. Mycoo, C. Toppin-Allahar, J. Gobin, W. Rennie, and J. Hancock. 2004. Feasibility of alternative sustainable coastal resource-based enhanced livelihood strategies. SEDU, UWI, St. Augustine Campus. 92 pp.
- Pomeroy, R.S. and T. Goetze. 2003. Belize case study: Marine protected areas co-managed by Friends of Nature. Caribbean Coastal Co-management Guidelines Project. Caribbean Conservation Association, Barbados. 69 pp.
- Renard, Y., A. Smith, and V. Krishnarayan. 2000. Do reefs matter? Coral reef conservation, sustainable livelihoods and poverty reduction in Laborie, St. Lucia. Paper presented at a Regional conference on Managing Space for Sustainable Living in Small Island Developing States, Port of Spain, Trinidad and Tobago, October, 2000. CANARI Communication No. 274:6 pp.
- Smith, A.H. 2001. A study of coastal livelihoods in Laborie, St. Lucia – social, human and financial capital. How different resources are used and integrated into household strategies of different stakeholder groups (R7559). Pages 7-12 – 7-13 in: *DFID Natural Resources Systems Programme. Proceedings of the Workshop Improving the poverty focus of NRSP's Research on the Management of Natural Resources*. Rothamsted, Harpenden, UK, November/December 2000.
- Smith, A.H. and S. Koester. 2001. A description of the sea urchin fishery in Laborie, St. Lucia. CANARI LWI Project Document no. 4. CANARI Technical Report no. 294. Caribbean Natural Resources Institute, Vieux Fort, Saint Lucia.

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- Smith, A.H. and Y. Renard. 2002. Seaweed cultivation as a livelihood in Caribbean coastal communities. Paper presented at the ICRI Regional Workshop for the Tropical Americas: Improving Reef Condition Through Strategic Partnerships. Cancun, Mexico, June 2002. CANARI Communication No 309: 8 pp.
- Smith, A.H.. 2003. Mapping Laborie Bay, Saint Lucia.. CANARI LWI Project Document no. 8. CANARI Technical Report no. 323. Caribbean Natural Resources Institute, Vieux Fort, Saint Lucia.
- Visser, L. (ed.) 2004. *Challenging Coasts: Transdisciplinary Excursions into Integrated Coastal Zone Development*. MARE Publication Series No. 1. Amsterdam University Press, Amsterdam. 245 pp.

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