

Participatory Coastal and Marine Management In Quintana Roo, Mexico

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Abstract

The Quintana Roo coastal ecosystem is characterized by extensive coastal wetlands, a fringing reef that develops .5 to 1.5 Km. offshore and vast seagrass beds in the adjacent reef lagoon. While protected areas and Ecological Planning Ordinances have not specifically been designed as Integrated Coastal Zone Management (ICZM)¹ tools, this paper demonstrates that they provide an important foundation for a statewide ICZM program in Quintana Roo. These environmental policy tools have been extensively used along the coast of this state to promote inter-governmental and public participation, establish important vertical and horizontal linkages and balance conservation and development. The paper presents a brief case study of a community-based ICZM program in Xcalak to demonstrate the efficacy of these tools. A voluntary best management practices guide designed for developers to complement ongoing government regulations provides a second example. A statewide ICZM strategy could benefit from these existing resource management programs, and complement emerging international agendas such as the Mesoamerican Caribbean Coral Reefs Initiative.

*A paper presented at:
International Tropical Marine Ecosystems Management Symposium
Townsville, Australia, November 23-26, 1998*

¹Integrated multi-sectoral resource planning and management for coastal resources has been widely discussed over the last two decades, resulting in the terms Integrated Coastal Zone Management (ICZM), Integrated Coastal Area Management (ICAM) and Integrated Marine and Coastal Area Management (IMCAM). All refer generally to the same set of strategies and methodologies used in coastal environments. All incorporate management of natural resources, conservation of biodiversity, maximization of socioeconomic benefits and protection of life and property from natural hazards within a participatory process that includes all stakeholders. Integrated management fits within the region's institutional and organizational environment, including political and administrative structures, economic conditions, cultural patterns and social traditions.

I. A REGIONAL VISION

Regional Description

Quintana Roo is blessed with rich coastal biological diversity and habitats including extensive mangrove, lagoon and coral reef systems. Mexican officials, NGOs and the private sector value the biological and economic benefits of these areas and have taken action to protect critical resources while also allowing for development in coastal areas. Within the context of this environment, the economic development pressures are tremendous. The tourism mecca of Cancun, located at the northern end of this coast, houses over 22,000 hotel rooms along only 20 kilometers of coastline. In just 25 years Cancun has grown to a population of over 350,000 as people move to the area to take advantage of the employment opportunities offered by this development. The southern expansion of Cancun, which extends to the archaeological site of Tulum and the popular dive destination of Cozumel, generates one third of Mexico's tourism revenues. Tourism is slowly developing along the southern coastline of Quintana Roo on the Costa Maya which borders Belize. Although this area is still lacking in basic infrastructure, the government has made a concerted effort to initiate tourism development here. The Sian Ka'an Biosphere Reserve, the largest protected area in the state, is located between the northern and southern segments.

Cancun's infrastructure is luring investors to begin to develop resorts along the still pristine northern coast of Quintana Roo. Growth will likely continue in this area, especially in light of the fact that the existing and proposed Ecological Zoning Programs allow for over 200,000 additional rooms in the Cancun-Tulum corridor and 15-20,000 hotel rooms along the Costa Maya. There is a general understanding in the state that tourism is linked to healthy and productive natural resources. A robust management program that involves all stakeholders is essential in order to ensure that the resources have a chance to survive all of the proposed development.

Using Environmental Policy Tools: Promoting Intra-sectoral and Public Participation

Environmental policy tools, such as Ecological Zoning Programs (Programas de Ordenamiento Ecológico del Territorio – OET) and Protected Areas, have been used for many years to encourage social participation in natural resource management. Recently the Federal government of Mexico has expressed an understanding of the effectiveness and need for public participation. Mexican Environmental Law (Articles 157 to 159) now states that "the Federal Government will promote co-responsible participation of society in planning, executing, evaluating and overseeing compliance on environmental and natural resources policy". Many of these tools are currently being used in Quintana Roo and provide a foundation for ICZM (Figure1).

a) *Ecological Zoning Programs*

An Ecological Zoning Program, OET, allows for the establishment of land and water use regulations and is theoretically applicable to all land/water use related issues dealt with by all government agencies at the Federal, State and Municipal levels. The OET process is meant to consider environmental, social and economic issues. Once approved by all appropriate parties, all other plans must be consistent and conform to the OET regulations. Four types of OETs are considered in the Ecology Law: General (National level), Regional (all or part of one or more states), local (municipalities) and marine (Federal Jurisdiction).

While not designed as such, OETs have the potential of becoming the main tool to unify diverse criteria and convene the different actors that need to be involved in an Integrated Coastal Zone Management (ICZM) strategy. Intergovernmental and non-governmental cooperating bodies (commissions, committees, etc.) must actively participate and "buy-in" to all stages of the OET process, including design, implementation, compliance and review to safeguard their effectiveness. If this process were to occur in coastal areas, it would substantially contribute to a national ICZM strategy.

Cancun -Tulum Touristic Corridor: The First Mexican Ecological Zoning Program

In 1989 when Cancun was starting to expand southward towards Tulum, the OET as a planning tool, had only recently been adopted into law. Federal environmental and tourism agencies, the state government and the two municipal governments were required by the President of Mexico to work jointly to complete this zoning document. As is the case in most land use planning processes, completing the technical requirements was easier than reaching consensus about how much and where development would occur. These important details had to be acceptable to the different levels of government and the diverse array of stakeholders. In 1994, after more than 6 years of technical and political work, the Cancun-Tulum plan became the first Mexican OET published in the Official Register. Developers protested this action since the final (and only) official public consensus building meeting had been oriented mainly to suit the governmental, academic and environmental voices.

In this case, stakeholder participation came too late into the OET process and represented only a token effort to include the public. The OET process generated so many problems that developers adopted an "easier to beg for forgiveness than ask for permission" philosophy. Neither developers, nor environmentalists or government agencies were happy with the many legal and practical loopholes in the OET. Many parties requested a revision of the OET document, calling for increased stakeholder participation. In response, a Subcommission for Ecological Ordinances was established in 1996 as a forum where the agencies from the three levels of Government might discuss the revision of the OET. Since then over 20 meetings have been held with participation from 80 representatives from government agencies, the private and social sector, academic institutions, environmental organizations, trade guilds and concerned citizens. Although this achievement may appear insignificant in societies that have a longstanding tradition of the participatory process, it is certainly a major step for Mexico where top-down decision-making has been the norm. Government agencies will determine the final shape of the OET, but this participatory approach will help to develop a more balanced and potentially more effective document and management regime.

Nichupté Coastal Lagoon System OET

In the mid 1980s, the process to develop an OET for the Nichupté Coastal Lagoon System was initiated due to public outcry. Cancun's citizens and environmental organizations were outraged by the filling of a large mangrove forest for a commercial subdivision. The Nichupté Lagoon System was one of the major tourist attractions in Cancun, and the bad odors and signs of eutrophication due to illegal sewage discharges were a focus of concern. These issues were of both environmental and economic concern. The Municipal Government organized the Subcommittee for the Protection of the Nichupté Lagoon System to facilitate a participatory process. The Subcommittee still continues to oversee the implementation of the Nichupté OET, promotes a Clean Waters Program for the year 2000 and consults with many governmental agencies in the permitting process for coastal activities. Its 65 members, representing a wide array of stakeholders, State and Municipal agencies, the private and social sector, academic institutions, environmental groups and trade guilds, meet regularly to discuss related issues.

Volunteer groups are convened to carry out specific technical or supervisory tasks. Results from these task forces are later discussed and voted within the Subcommittee. Tasks may include: reviewing environmental impact statements to determine if they comply with the OET; providing social support for blocking illegal sewage pipes that drain into the lagoon or designing and promoting the Federal Decree for the Costa Occidental de Isla Mujeres, Punta Cancún and Punta Nizuc National Park. These volunteer groups or commissions exist only until the completion of the respective tasks.

The Ecological Zoning Program in Cancun-Tulum and Nichupté still have problems. Developers consider OETs as investment disincentives. Environmentalists feel that the government has not shown enough political will to enforce the still imperfect provisions contained within them. Both sides could be considered correct. In any event, they have provided two very important and very rich experiences on intra-governmental and public participation in coastal conservation and development issues that need to be learned from and extended.

b) Protected Area Management

Protected areas constitute an important part of the Mexican strategy to protect biodiversity. Protected areas in Mexico are conceived to a certain extent as multiple use zones, where activities are limited by the thresholds imposed by sustainable use of natural resources. In this respect, protected areas are not isolated from the National economy. Rather, these areas enhance and consolidate Mexico's economy within the limits imposed by the need to conserve environmental conditions.

This situation has generated certain confusion, when it is assumed that Mexican marine protected areas are "de facto" no-fishing zones. Protected area management plans might restrict fishing activities in certain no-take zones. However, these no-take zones can also be created outside of protected areas through different legal provisions: either the Ecology Law (Article 97) dedicated to the establishment of nurseries, breeding facilities and "species reserves" for aquatic flora and fauna, or through the Fisheries Law "fisheries reserves and refuge zones". Fisheries management issues have brought another very important group of participants into the protected area stakeholder process. Fishermen and their trade guild organizations, along with the Federal and State fisheries agencies, have their own dynamic regulatory structure. These actors only superficially participate in OET related issues.

In order to promote interagency and public participation in the development of its protected area management strategy, the Mexican government has instituted three participatory consultative bodies: Technical Advisory Committees (TAC), Planning Councils and Consultative Councils for protected areas. While these three bodies have different names, their purpose is exactly the same — to assist the management of protected areas through a consensus building processes.

The number of coastal and marine protected areas in the State of Quintana Roo has grown tremendously over the last four years. Almost all of these sites have an operative structure and a management plan, and all of them have experimented to some degree with participatory resource management. A short description of the individual protected areas helps to understand this recent, but important trend.

- Yum Balam Flora and Fauna Protection Area was established in 1994 by the local Mayan community. Although still lacking a management plan and an administrative structure, the Consultative Council has been promoting sustainable development projects within the area. The Council has been quite successful at channeling governmental funds into natural resource management based community development projects.
- Isla Contoy National Park which was established in 1961, initially protected only the island proper. In 1997 the Park was re-categorized and expanded to include the surrounding marine areas. A management plan and administrative structure is in place. The Technical Advisory Committee (TAC) actively participates in management decisions such as authorizing guided tours; developing income generating activities; and researching and managing an experimental season for ballyhoo (*Hemiramphus* spp.), a bait used in sportfishing. The beneficiaries pay for the research.
- Costa Occidental de Isla Mujeres Punta Cancún y Punta Nizuc National Park was established in 1973 and re-categorized and expanded in 1996. The original decree covered only fisheries and pollution issues. The Planning Council that stemmed from the Reef Commission formed by the Subcommittee for the Protection of the Nichupté Lagoon System oversees the management of the Park. A two-year participatory process resulted in a management plan. Funding has been provided by a trust fund established by the tour operators that work within the Park. One example of an issue that the Council successfully resolved is seen in the reduction of "wave runners" in the Punta Nizuc Park polygon to minimize their negative impacts on the environment.
- Arrecife de Puerto Morelos National Park was established in 1998 as a result of a community driven process. The Park still lacks a management plan and an administrative structure. Although the local Technical Advisory Committee has not been

formally established, the community meets regularly to discuss issues such as fundraising for the management plan and limiting the number of tour operators who are allowed to provide the service within the Park.

- Arrecifes de Cozumel National Park was established in 1980 and re-categorized and expanded in 1996, since the original decree dealt only with fisheries and pollution issues. A management plan and administrative structure is in place and the greater part of this cost is being paid by a trust fund established by the tour operators that work within the Park. The Planning Council has been very active and the recently concluded management plan for the park was designed with the participation and involvement of all stakeholders.
- Sian Ka'an Biosphere Reserve was established in 1986 and expanded in 1997 to include portions of the adjacent coral reefs. A management plan and administrative structure are in place. The concept of participatory management for Mexican protected areas was originally tested in Sian Ka'an. A Representative Council (Consejo de Representantes) was created in 1983 to promote the establishment of the reserve and define its first management plan. Unfortunately the idea was too "radical" for its time and the Council was disbanded by the Federal and State Governments in 1987. In 1992 the Council was re-established as a Technical Advisory Committee. Some important decisions made by these bodies include: a self-imposed ban on harvesting "chit" palm (*Thrinax radiata*)—a palm used for the construction of lobster traps— within Sian Ka'an until research was carried out to determine the sustainability of this practice. Since a very slow recruitment rate to harvest was observed, the ban was kept in place. The Council has also prohibited the use of SCUBA to catch lobster on the reef and put severe restrictions on the use of nets in Ascension Bay.
- Banco Chinchorro Biosphere Reserve was established 1996. The TAC, representing government and resource users, was formalized in late 1998 and will have a leading role in designing the management plan. In 1997 the three fishing cooperatives that use the Bank petitioned the Federal Government to establish a two-year ban on the capture of Queen Conch (*Strombus gigas*). The cooperatives believed that by establishing a ban they could alleviate some of the stress on the declining species and reduce the number of pirate fishers. Unfortunately the Government did not respond positively, since resources for enforcing the ban were not available.

Although these experiences imply that significant advances have been made towards local stakeholder participation in resource management decisions, it is important to recognize that this concept is in its infancy. There are still important forces that support an authoritarian decision making process. In addition, a great deal of stakeholder training and capacity development needs to take place in order to be able to achieve positive and long lasting results from the public participation process.

II. A CASE STUDY OF XCALAK AND THE MAYAN COAST OF QUINTANA ROO

Within the context of the ongoing coastal management activities in Quintana Roo, the initiative in Xcalak has focused on developing capacity at the local level to promote participatory coastal management. Xcalak, a small fishing village at the Southern end of Quintana Roo has been the site of a three year collaborative project of Amigos de Sian Ka'an, A.C. (ASK), the University of Rhode Island's Coastal Resources Center (URI-CRC) and members of the Xcalak community. A brief case study of this site will demonstrate the utility of Protected Areas and Ecological Zoning Programs (OET) as policy tools for promoting intra-governmental coordination and public participation in Quintana Roo. The Xcalak model is a community-based project that has yielded impressive results. The Xcalakeños have employed these two tools as a means for protecting their own resources thereby building linkages among a wide array of stakeholders in their community, including government sectors, while establishing a foundation for future

resource management strategies. This case study will also introduce the greater significance of these resource management programs in supporting a movement to statewide ICZM in Quintana Roo.

Xcalak Site Description and Background Information

The Xcalak peninsula is located at the extreme southern end of Quintana Roo, adjacent to the border of Belize and that country's Bacalar Chico Marine Reserve. This peninsula contains some of the least developed coastal areas in Mexico, including dense mangrove forests, large lagoons and exceptional coral reefs. The fishing village of Xcalak is the only significant settlement in this area, with a total of 285 inhabitants. Founded in 1900, Xcalak is considered to be one of the first important ports in the Western Caribbean. Coconut farming was the primary industry until 1955 when hurricane Janet decimated this coastline, known as the Costa Maya. Since then, the Xcalakeños have relied on fishing, and to a growing extent tourism, to sustain their population. For both industries, the economic structure of Xcalak continues to be closely tied to the health of the area's natural endowments.

During the mid-1990s two important developments lead the village of Xcalak to take action to protect their natural resource base. First, fishermen became increasingly concerned about declining fish catch along their coast. Fishermen perceived that they were spending more time fishing, overall catch was reduced and individual fish were smaller. Second, the state government informed the village that the Costa Maya had been targeted for tourism development. The community of Xcalak realized that it must be proactive and participate in the planning of the community's development to ensure that coastal resources were protected and local benefits were realized.

The community requested assistance from the federal and state governments to improve fisheries management and promote low-impact tourism development strategies. At the same time, the Xcalak community requested assistance from Amigos de Sian Ka'an, A.C. who was establishing a relationship with the University of Rhode Island's Coastal Resources Center. The URI-CRC, ASK and Xcalak community partnership initiated a program to introduce community based ICZM along the southern coast of Quintana Roo.

The Xcalak Community Committee and the Participatory Process

One of the most significant results to emerge from the partnership between ASK, URI-CRC and the Xcalak community was the decision to establish a 17,000-hectare Marine Protected Area (MPA) in the form of a national park. The Xcalakeños reasoned that forming a "Xcalak National Reef Park" would protect coastal resources while allowing low impact tourism development. Members of the Xcalak community visited the neighboring Hol Chan Marine Reserve in Belize to discuss marine protected area issues with staff and the local community. Shortly thereafter members of the Xcalak community formed the Xcalak Community Committee (XCC) to coordinate the activities towards establishing their own protected area.

The XCC has fostered public participation by hosting and participating in ASK/URI-CRC workshops on ecotourism and tourism management. Xcalakeños have participated in every aspect of the proposal to designate the national park. The XCC has continually held public meetings to gain the community's input on protected area management strategies. Local knowledge and hands on assistance were important elements in preparing a background document² for the national park proposal, which included biological, social, cultural and economic concerns. The formation of the XCC and the ensuing movement towards establishing the Xcalak National Reef Park reinforced the desire for and practice of participatory management.

The Costa Maya Programa Ordenamiento Ecológico del Territorio (OET) is a federal/state level ecological zoning program which includes the Xcalak peninsula. Members of the XCC participated in the Costa

² ??????Propuesta para el Parque Nacional

Maya OET meetings and consultative process to ensure that the proposed national park will be incorporated into this larger zoning effort. Through this process the XCC has expanded its role in the statewide planning process. Inter-governmental collaboration has increased through work with municipal, state and national agencies to ensure that the Xcalak National Reef Park conforms to the goals and criteria of the various agencies.

Voluntary Use of "Best Management Practices"

Given the challenges of implementing and enforcing these new regulatory initiatives in Quintana Roo, ASK and URI-CRC have developed a complimentary voluntary tool for promoting low impact practices for tourism infrastructure development (*Normas Prácticas*)³. While developers often feel that regulations are disincentives for their development, this *Normas Prácticas* manual outlines practical design and construction methods to reduce long term cost to both the environment and their development. Practical guidance is provided on measures such as siting structures behind dunes, maintaining natural vegetation cover and constructing wetlands for wastewater treatment help to maintain the natural function of the underlying ecosystems while minimizing runoff and pollution to nearshore coastal waters.

These voluntary actions are seen by both the private and public sectors as a tool for sustainable development. The partnerships being developed with investors aim to promote both near term benefits to the reefs and coastal ecosystems as well as the long term economic benefits from reduced storm damage, lower treatment costs and increased potential for sustainable tourism. Voluntary compliance is an important aspect of this program, and establishes the basis for incentive and certification programs, such as Green Globe. Under such certification programs, hotels and industries are encouraged to practice environmentally sound management systems in exchange for cost savings and enhanced marketing potential for their establishments.

While the private sector has been a major target for these practices, the government sector has also seen the benefits of incorporating these practical measures into the OET as basis for sound planning and development. These practical guidelines, along with an easy to read manual in Spanish and English, will provide government officials and environmental advocates with a tool within the regulatory framework to promote long term sustainable development. This initiative, along with the promotion of voluntary compliance by the private sector, will complement the ecological ordinances and the protected areas in Quintana Roo. Together they provide essential elements of ICZM.

III. RESULTS AND LESSONS LEARNED

To complement their work in the planning process the Xcalak Community Committee has produced several important products. First the XCC developed and published a Community Strategy⁴, a document that codifies the community's goals for development and outlines a process for achieving those goals. Second, the XCC completed a tourism strategy, a document that establishes a community plan to promote and regulate low-impact tourism development. Third, the XCC submitted a final proposal to the appropriate government agencies to create the Xcalak National Reef Park. These three products send a clear message to government officials that Xcalak is committed to playing an active role in conserving and managing the natural resources of that area.

The Xcalak model offers some valuable lessons learned for promoting public and intra-governmental participation. First, in mobilizing for a protected area, the Xcalak community clarified and articulated its

³ Normas Prácticas para el Desarrollo Turístico de la Zona Costera de Quintana Roo, México.(Guidelines for Low Impact Tourism along the Coast of Quintana Roo, Mexico) Molina, C., P. Rubinoff, J. Carranza, 1998.

⁴ "Estrategia Comunitaria para el Manejo de la Zona de Xcalak, Quintana Roo, México" (Community Strategy for Managing the Xcalak Region). December 1997. Amigos de Sian Ka'an, Coastal Resources Center, Comité Comunitario de Xcalak, USAID.

goals and objectives, fostered an unprecedented participatory process and became engaged in the larger state planning initiatives. The formation of the XCC and its ensuing work in these areas created vertical linkages between the local community, the local, state and national governments and a wide array of other stakeholders. These linkages are essential for any statewide ICZM effort in Quintana Roo.

Plans are underway to replicate the Xcalak model in other coastal communities in Quintana Roo. Expanding the Xcalak model into additional Quintana Roo communities will give more momentum to a statewide ICZM initiative. Additional communities will add to an increasingly large portion of the coastline under some form of resource management program.

Finally, connections were made between Xcalak and Bacalar Chico in Belize that support international collaboration in larger ICZM initiatives such as the Mesoamerican Reef Initiative. The Xcalak Reefs National Park, when officially designated, will complement the Bacalar Chico Marine Reserve to form a substantially large area of the Mesoamerican Caribbean Coral Reef, which falls under a coastal management initiative.

Transferrable Lessons

In summary, some of the transferable lessons-learned for local and regional coastal initiatives include:

- Existing environmental policy tools can be used to initiate “experiments” with intergovernmental and public participatory processes, which can later evolve into legally established tools. Lack of specific instruments should not deter public and private stakeholder participation. It is better to begin working with available tools and provide a legal framework after the process has been tested. With the public support gained through the initial process, gaining a legal mandate for a program should be much easier.
- Protected area programs can facilitate the development of intergovernmental and public participation processes because they provide manageable pilot projects within a specific geographic scope and with a defined set of conservation objectives.
- Intergovernmental and public participatory processes should be kept focused and simple in their infancy. This is especially important in cultures where participation in public policy issues is new. Participatory capacity will be built faster by tackling common issues across stakeholder groups (e.g. deal with fisheries separate from tourism). Once these initial issues have been internally resolved they can be brought together to a joint forum and modified if needed. By this time stakeholders from each side will have a clearer view of their own issue and will be able to focus on the other side of the issue.
- Using on-site examples to demonstrate positive and negative impacts of regulatory measures can promote and enhance the participatory process.
- Public participation makes regulatory processes slower in the short term, but more durable in the long term.
- No-fishing zones should only be established when the capacity exists to enforce and monitor these areas. Community established no-take zones should initially be created with a modest scope to increase the factors for implementation success. Once these programs are locally proven to work and provide an important service, they can expand to encompass larger and more remote areas.

IV. CONCLUSION

Although the Mexican National Environmental Plan 1995-2000 includes environmental protection of coastal zones as a strategy and priority action, an Integrated Coastal Zone Management (ICZM) strategy has not been explicitly proposed. Nevertheless, opportunities for establishing an experimental strategy are present along Mexico’s Caribbean coast, since almost one half of this coastal strip is already actively

involved with multi-governmental and public participatory bodies that address natural resource management decisions.

Other ICZM related structures based on the National Waters Law, such as the Watershed Councils (Consejos de Cuenca) and National Waters Reserves (Reservas de Aguas Nacionales) and their participatory governing bodies also provide a potential mechanism for ICZM. Applicable lessons derived from the ICZM strategy that is being implemented in the adjacent coast of Belize could also be utilized to inform and complement a Mexican strategy. Consolidating these existing experiences into a unified strategy could eventually constitute Mexico's best opportunity to establish an ICZM strategy for an 11,000 kilometer long coastline.

There is also international support towards the development of an integrated strategy. On June 5, 1997, the "Tulum Declaration" or the "Mesoamerican Caribbean Coral Reef Systems Initiative" was signed by the First Minister of Belize and the Presidents of Honduras, Guatemala and Mexico. The goal of this initiative is to promote conservation and sustainable use of coral reef systems shared by these four nations. An action plan has been designed to jointly promote effort such as scientific research, management, monitoring, and education among others to treat this shared environment as one ecosystem. This initiative offers a framework for perhaps the most viable and transcendental opportunity on the planet for carrying out a multinational conservation effort. Coral reefs can not be isolated and will not be protected until the complete array of socio-biological coastal processes is taken into consideration. Corals could constitute the "flagship", "umbrella species" or "charismatic microfauna" that could allow for the adoption of an experimental Integrated Coastal Zone Management strategy in Mexico. This will permit not only the conservation and sustainable use of coral reefs, but also that of other coastal ecosystems and species.

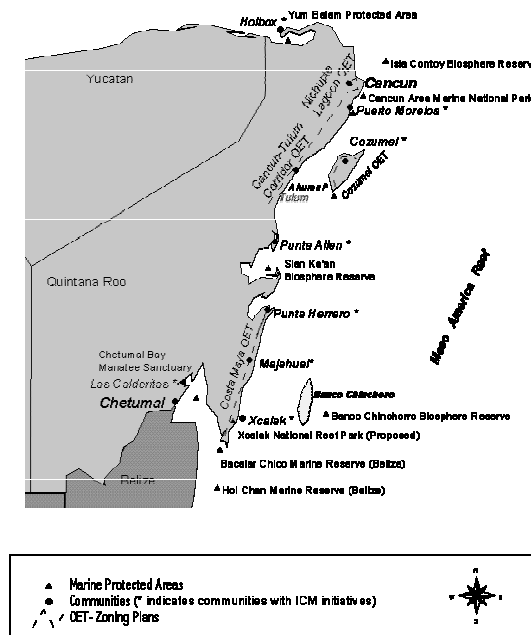


Figure 1: Environmental Policy Tools Being Utilized in Quintana Roo Protected Areas and Ecological Zoning Programs