

Development of alternative technologies based on the application of artificial reefs for both the Wayúu artisanal fishery and the conservation of marine fauna in Cabo de la Vela in Guajira, Colombia.

1.1 Title. Development of alternative technologies based on the application of artificial reefs for both the Wayúu artisanal fishery and the conservation of marine fauna in Cabo de la Vela in Guajira, Colombia.

1.2 Background. The Guajira region of Colombia incorporates potentially rich marine ecosystems that have been little studied to date. The locality of Cabo de la Vela (or Candle Cape) in the Guajira makes up a coastal area that has been exploited by the native indigenous, the Wayúu Indians, since ancient times. During the past decades, however, this coastal area has also been subject to heavy pressure by the industrial fishery.

Cabo de la Vela is located in the northwest of Colombia by the Caribbean Sea and has been regarded as part of a marine ecosystem of great productivity. The human population consists of the native Wayúu people and most Wayúu fishing villages are located in the northwest coast of the Guajira region. Traditionally, the artisanal Wayúu fishery of this area has considered fish, lobsters, and sea turtles as the major source of subsistence and economy (Guerra, 1990). Very small efforts from the legal administrative units have been made so as to evaluate any impacts resulting from the artisanal fishing practices upon the marine environment.

Industrial fishing is another unregulated body in that area and has expanded in the past years. Most of this commercial fishing dedicates to the exploitation of lobster, prawn and tuna. The national and foreign fleet has multiplied, and fishing effort and catches have proportionally increased. According to the Food and Agriculture Organization of the United Nations - FAO - (2000), about ninety percent of the tuna and lobster catches in the Colombian Caribbean come from the industrial fishery.

It has been known that intensive pressure along with uncoordinated and unregulated fishing leads to the eventual collapse of any fisheries. At the moment there are no very prominent signs of explicit conflict over resource allocation between the artisanal and the industrial fisheries, however, some friction exists between the two parties, which could undergo harsher responses.

1.3 Current conditions. The growing fishing pressure and marine resource usage in Cabo de la Vela may be producing deleterious effects that might be unfavourable to both its human inhabitants and the context. Some speculations suggest that fish stocks, mainly food-species like Lutjanids (*Lutjanus analis*), Escombrids (*Scomberomorus caballa*), Carangids (*Caranx hippos* and *C. ruber*), Centropomids as well as Chelonians (sea turtles) and crustaceans (lobsters: *Panulirus argus*), have become severely depleted in several areas including Cabo de la Vela.

As a result, the local community, the natural ecosystem, and the overall Guajira region, continues to degrade. Short- and mid-term possible scenarios might be depicted in the following four points: 1) Disruption of the natural supporting habitat processes and disturbance of the immediate marine ecosystem; 2) Failure of primary food resources (and

main protein source); 3) Further dislocation of the local economy; 4) Contribution to higher social unrest.

Generally, most countries tend to believe that the more fish catches and landings there are the better the economy will be. In this regard, the Colombian government has set policies that implicitly give priority to the industrial fishery, leaving aside the needs of small-scale fisheries. Nonetheless, many of these ongoing commercial practices have been performed inappropriately usually with harmful and destructive operations and artifacts (e.g. intensive effort, trawling, non-selective gear, etc), and repeatedly circumventing the 12nm “boundary” law for inshore fisheries (personal communication).

Not surprisingly, the legislation for Colombia’s use of natural resources becomes a tricky task. The “Ordenamiento Territorial” Act (Territorial Ordering Act), which was created in 1991 when the national constitution was modified, provides the basis for the conservation and sustainable management of coastal and marine resources. Accordingly, every municipal government must propose a “Plan de Ordenamiento Pesquero” (Fishery Ordering Plan) for 9 years and it has to follow the procedures expressed within the framework of the Territorial Ordering Act.

Local and regional governments have had tremendous difficulties when complying with the Fishery Ordering Plan. Besides, compliance with this Plan does not guarantee that most resource users would be heard or that it would be achieved in a democratic fashion. These difficulties arise because governmental and institutional capacity at this level appears very limited (personal observation). Some examples are the lack of sufficient information, inadequate research, premature technologies and facilities, poorly trained personnel, incompetent official staff, lack of funding, reduced incentives from central government and institutions, control isolation, power and funding misuse, local paternalism, and negligence.

Consequently, the Fishery Ordering Plan - as for Cabo de la Vela - mirrors the needs and purposes of medium and bigger industrial fishers therefore favouring this sub-sector. It is much easier for regional and local governments to evaluate and negotiate with the industrial fishery than the larger and more dispersed artisanal or small-scale fishery. Under these circumstances the development and sustainable management of the local coastal and marine resources, as proposed by the Territorial Ordering Act, will most likely be unachievable.

1.4 Objectives. It is critically important to obtain sound information at the biological-ecological, economic, and sociopolitical levels. This research study is aimed to acquire a thorough understanding of the underlying local processes in order to produce a local coastal management plan. The study also seeks to implement an alternative technology based on the deployment of artificial reefs – Reef Balls. The latter objective examines how the application of these types of incentives serves as a conduit to strengthen community management efforts and the functioning of the marine environment for the protection and enhancement of conservation and sustainable use of coastal-marine resources.

1.5 Population. The direct beneficiaries of the research project are the Wayúu indigenous community of Cabo de la Vela. This locality has just over 600 people (personal communication), however, there are flows in and out depending on certain cultural and

social factors. The Wayúu culture is characterized by a matriarchal condition where women are in charge, by tradition, of dealing with political and social decision-making (after consulting with elders and other community members). Although all people participate, including children, women, and elders, it is expected to have sufficient participation and commitment from the fishermen group, which makes up a major component within the project. Nonetheless, the benefits will have a broader reach as the project intends to systematize the information and bring it or make it available to local educational institutions, civil organizations, and other governmental bodies.

2. Description of the participating Organization.

2.1 Terrazul Foundation for Biological Diversity Conservation - Conservación Terrazul- is a Colombian non for profit organization located in the capital city of Bogotá D.C., and with a research base in the north of the country by the Caribbean Sea. This organization was founded by the marine biologist, Diego Moreno, in May 2001. Currently, Conservación Terrazul is integrated by a small number of scientists and professionals with increasing knowledge and experience in the field of sustainable development, applied science, and community participatory involvement. Some of their previous works have been undertaken in places such as the Amazon in Brazil, the Great Barrier Reef in Australia, and the Pacific and Caribbean Coasts of Colombia. (Visit our website www.terrazul.org)

2.3 Organization's involvement in the region. A preliminary study was conducted between late 2000 and early 2002. Indeed, these work at Cabo de la Vela provided valuable information on the current condition of the marine ecosystem and social issues. Conservacion Terrazul Foundation compiled such data regarding the state of the artisanal fishery and marine resource uses, and formulated an early diagnosis. This period also helped establish a formal community-foundation relationship whereby knowledge and experiences could be shared. It has been observed that although food scarcity is an increasing phenomenon, there may be ways to improve the re source shortage in the short-term. Problems related to the demise of fish and lobster stocks (populations) can be tackled with a "hands on/cooperative" approach. In this regard, the organization and the community supported and agreed with the need of imple menting the project in question.

3. Resource Support.

3.1 Institutional support. The said project was evaluated by a national agency by the name of Ecofondo (Ecofund). Last June, after having met the eligible criteria, the project was finally selected. The national agency Ecofondo is currently carrying the follow up of the project and supervising the focal organization (i.e. Conservacion Terrazul). Ecofondo's main task is to serve as a channel to convey information and resources from the focal organization to the primary funding resource agency and vice versa.

3.2 Primary funding resource agency. After being selected, the project becomes recipient for founding from the Fondo para la Acción Ambiental (Fund for Environmental Action). This Fund is a Colombian-United States initiative and receives financial support from national institutions and private organizations of the United States.

3.3 Local community. The legal authority of Cabo de la Vela has continuously provided support. Also, the traditional leaders of the community, who have greater recognized status than the legal authority within the locality, have accompanied the focal organization in the participatory activities of community involvement. The contribution of this segment of the population has definitely made possible that other local stakeholders (fishermen, middlemen, teachers, settlers, tourism sector) have access and understanding to the project's goals and procedures.

3.4 Local institutions. Other governmental institutions such as the Corporación Autónoma Regional Guajira (Guajira Regional Autonomous Corporation) and the Secretaría de Asuntos Indígenas (Secretary of Indigenous Affairs) have provided some type of support mainly through logistics and other complementary services, however, in a more limiting condition.

3.5 International Foundation Support. Recently, the Reef Ball Foundation (<http://www.reefball.org>) and Conservacion Terrazul have become partner organizations. Reef Ball Foundation is an American non-profit organization; it has worked for over 10 years in the field of artificial reefs and currently promotes and supports many projects around the world, including New Zealand. The partnership will allow the actual project receive aid from the Reef Ball Foundation. This aid can be translated in terms of getting access to technical support, assistance, and training on artificial reef technologies.

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