

A more direct dialogue

The film under review strives to understand the question of olive ridley marine turtles in Orissa, India, and their interactions with marine fisheries

Throughout the film under review, information is provided in a well-balanced way that keeps the viewer's attention. This readily allows for the marine turtle question and the interactions with marine fisheries in the locality to be understood. The film provides a structured view of the historical context, the current situation and future prospects. It also considers the possible effects of the development of the coast for the exploitation of petroleum and its derivatives, a matter that will affect the habitat and drastically complicate both the survival of the turtles and other marine species that are currently taken advantage of for human consumption.

Considering only the current situation, it is very important that the needs of the population in general and of the fishermen and their dependent families in particular are understood and resolved. Restrictions imposed on the exploitation of resources, in certain areas, will cease to be functional if they do not also resolve the problems of the families who depend on them. For however many regulations may be established, the food needs of the coastal population increase daily, becoming an urgent requirement.

Another issue is that the fishermen do not understand why they are banned from working in the traditional fishing areas they are accustomed to, when they observe that turtles are still abundant, although not all the year round. However, the film can be used to show them that large numbers of turtles are being found dead on the beaches, which indicates that something bad is happening. It also needs to be clarified that the fishermen of the locality know well, where and when they can catch marine turtles, whether intentionally or

unintentionally. As they are the ones who can best help avoid their capture, seasonal and zonal bans must be established through the common consent of authorities and the fishermen or their representatives. If they are established in this way, measures to restrict access to areas of turtle concentration and to delimit seasonal bans will be more easily accepted. In this sense, the film is a positive step, as, through it, a more direct dialogue is possible with all the people involved in the exploitation of marine resources in the area.

One of the most significant parts of the film shows the consequences of fishery regulations, designed to protect turtles, that in some cases have pushed a small number of fishermen to commit suicide. This is not only due to the laws established but also due to the circumstances under which the fishery is developed, where there is an apparent scarcity of facilities to support the fishermen's work or to help them to deal with their economic problems. It is, therefore, most necessary that these social and human dimensions are resolved in parallel with applying fishing restrictions. Also, the lack of credit for the purchase of vessels and fishing gear, increases the problems of the fishermen, and, with no clear solutions being provided, creates a vicious circle between working for turtle conservation and subsistence fishing.

Other options

What other options are open to the inhabitants of the Gahirmatha and Rushikulya coastal regions? Is it possible to project turtles as an ecotourist attraction? Can some of the eggs laid on the beaches during spawning be exploited, for example, through a simple process that transforms them into

powdered egg? It may be possible to establish an organization in the area responsible for ecotourism or utilizing those eggs that have no chances of survival. Questions also remain as to whether turtle eggs are consumed in the region illegally (through smuggling), or whether, in general, turtles are not eaten for religious reasons.

If the community in the area has no tradition of eating eggs, the work to protect the beaches will be made easier.

In major fisheries, quotas for by-catch have been established, as, for example, in the exploitation of tuna in the central Pacific, and when the ceiling is reached, the fishery is closed. Perhaps a system could be set up that puts limits on by-catch that does not affect people's survival. The film does not show whether a complete record is kept of the by-catch (for both dead and live turtles), nor does it indicate whether any record is kept of the number of turtles that are freed alive, and in what conditions they are returned to the sea. This is important for establishing mortality levels, and for understanding the impact incidental mortality has on the population of marine turtles. If no record is kept of by-catch, it will be necessary to design a log, particularly for trawlers and gill-netters. Using the information thus gathered, it should be possible to design a model of the (incidental) fishery, and its effects

over the years, so that it is possible to monitor the positive or negative effects of conservation measures (restrictions, closed fishing areas, restrictions on fishing effort and catch levels).

It is also important to clarify that the species in question "is not in danger of immediate extinction, unless its habitat is radically altered". The distribution of this species (*Lepidochelys olivacea*) is the widest on the planet. However, it is clear that there are places where their populations have reduced drastically, and there are even some beaches where massive spawning used to take place, and where now only a few of the turtles remain. Without any support or protection, it will be difficult for these to recuperate.

There are three countries where populations of this species occur in great numbers. These are India, Mexico and Costa Rica, and in all three countries, the issues are very similar. Fishing interacts with turtle populations, occasioning by-catch and mortalities, and, in each country, efforts to resolve the problem have adopted a different focus.

Incidental mortality

The film does not tell us whether the effects of incidental mortality rates on the abundance of the population have been quantified, nor about the effects on the survival of the populations. In the three countries mentioned, incidental mortality has been reduced substantially, but is still

considered to be very high. But there are no definitive studies.

In Mexico, it has been observed that on the beach of La Escobilla, in the State of Oaxaca, despite commercial catching and high levels of destruction by humans and animals (wild and domestic) on females, nests, eggs and hatchlings, after applying a total closure in 1990, and continuing with protection activities on the spawning beach, the population has remained stable and, in the last decade, has even shown a slight recovery. Activities to protect reproduction on this beach have been carried out since 1973, and between 1987 and 1988, after the turtle populations had reached minimum levels, they recovered and today the populations are considered abundant and healthy. A research centre has been established at La Escobilla, which undertakes monitoring of the species, and also offers alternative work opportunities for a community that was previously occupied with turtle fishing. There has been no significant recovery of the turtles on other spawning beaches in Mexico, possibly because protection and conservation activities have not been undertaken with the same intensity and constancy over the past 20 years. This implies that the recovery of this species can be achieved if protection programmes are implemented, and regulations for the fishery and closed seasons are respected, and if alternative occupations are given to those fishermen whose livelihoods depend on turtles.

The film under review has much about the need for protection and management, implying that the survival of the species may be prejudiced even more if the development of the infrastructure required by the petroleum industry is given the go-ahead. This requires the formation of a powerful and multidisciplinary movement to promote marine resource conservation and to support the dependent populations, given that industrialization in the area will not only affect turtles but also the entire ecosystem of the region. The human population will be particularly affected, as each day their inheritances are diminished, and their chances of survival, reduced. In Orissa, 47.5 per cent of the population live in poverty, including 70,000 fishermen. It is crucial that their

lives are improved, and that, at the same time, nature conservation is enhanced. Both marine turtles and traditional fishing—and their protection—should be seen as priorities. The diffusion of this documentary is a very important contribution towards that goal.

Review

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