

# Governance of Marine Protected Areas: Between Protection of Biodiversity and Local Development

Sara Messali and Said Chaouki Chakour

**Abstract**—*In the context of globalization, and in response to the changing needs of the local population and competing adjacent territories, areas are subjected to territorial dynamics. It sometimes has adverse effects on natural areas, particularly coastal areas.*

*In light of the degradation of marine biodiversity caused by human activities such as fishing and tourism, marine protected areas (MPAs) are thriving. They are protected sensitive areas that enable the integrated management of coastal areas, which are small and do poorly when local residents depend on natural resources for their livelihoods because of the type of governance. The challenge is to ensure socio-economic profitability, which would have a very positive impact on the well-being of local residents, while maintaining the sustainability of natural resources.*

**Keywords**— Governance, Marine protected area, Participatory approach, Sustainable local development.

## I. INTRODUCTION

Considered as being a project serving only for conservation, marine protected areas (MPAs) are at the heart of the preoccupations of researchers concerned with environmental problems. From an economic point of view, the creation of MPAs is seen as a public expenditure which penalizes human activities and hinders local development. For local populations, MPAs represent a real dilemma between the protection of natural wealth and local development [1], thus producing tensions within these sensitive territories. This observation leads us to explore the tools, methods and strategies that can help the reconciliation between man and nature as well as the consultation of stakeholders to achieve the objectives of the creation of MPAs. As such, we formulate the following hypothesis :

Contrary to what is admitted by almost all actors, MPAs can play a decisive role in reconciling conservation objectives with the objectives of economic and social development. This reconciliation requires a participatory and multidisciplinary approach based on social equity and governance.

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This article is therefore intended as participation to understanding the real contributions of MPAs, by emphasizing the profound uses of their implementation in sensitive territories for the protection of biodiversity in a perspective of local and sustainable development.

To do this, we have adopted an empirical approach by addressing the possible repercussions of the creation of MPAs on the protection of the resource and the improvement of the well-being of local populations. Our choice fell on the Taza MPA. By taking some evaluation indicators of MPAs, our study is based on their calculation. We identify the positioning of the projects, i.e. Taza, facing the intensity of the territorial dynamics and the expectations of the local population in terms of sustainability and economic return.

## II. INVENTORY AND ISSUES OF NATURAL HERITAGE

It is true that in the past the problem with resources was accessibility. Man had great difficulty either in the knowledge or even the necessary material. Today, we have reached a stage where all resources are available for use despite the associated costs for some. On the other hand, we are faced with an obstacle that is imposed against the maximization of the profits that can be generated from the use of resources. It is the depletion of these resources.

In 1946, Joseph Schumpeter used in his essay "Capitalism, Socialism and Democracy" a very significant expression, "creative destruction", which describes incredibly well the situation in which we are now living which means that everything that is produced at a price of destruction. However, the problem is the control of this eternal devastation which is the mission of sustainable development [2].

According to pessimistic forecasts, natural resources have been exploited to their full capacity and even beyond, which has caused the collapse of some once-abundant fisheries, especially with pollution, the greenhouse effect, etc. As evidenced by this, IUCN published a document in 2012 citing a list called the Red List which indicated species at risk and how to categorize them through criteria.

Certain human activities have serious consequences, mainly those in the tourism and fishing sectors. These are all reasons to worry about the health of ecosystems, which is deteriorating and is likely to worsen because coastal areas are sensitive

interfaces. It is in this context that the adoption of an MPA draft is necessary.

According to the IUCN, marine protected areas are "Any intertidal or infratidal space as well as its overlying waters, flora, fauna and historical and cultural resources that the law or other effective means have been set aside to protect all or part of the environment thus delimited" [3].

According to their objectives, MPAs have gone through several names, which in some ways can be considered as types of MPAs:

- Fishing reserve: when it aims to ensure the reproduction of commercial species.
- Marine sanctuary or integral reserve: in this case, no human activity is allowed.
- Marine park: when its establishment consists in protecting the ecosystem by authorizing some economic activities.

There are many goals that motivate the adoption of MPAs. For this, they must be clearly known upstream of the establishment of the MPA in order to benefit from the support of local actors.

#### 1) Direct objectives of the creation of MPAs:

- Protect rare and/or threatened species without forgetting cultural and archaeological sites;
- Preserve remarkable habitats, in other words the protection of biodiversity;
- Reduction of destructive activities using compensatory ecological measures;
- Reconstruct degraded environments: some resources are fully exploited, but according to researchers, they can be saved and the sustainability of fish stocks can be ensured by improving their biomass using a program to organize human activities;
- Manage sites with a strong tourist attraction;
- The sustainable management of a natural environment subject to multiple uses, with the aim of resolving territorial problems and conflicts;
- Facilitate and improve scientific research: some MPAs allow practical research work to be carried out through direct observation of the development of the phenomena studied without being disturbed by other activities, which will reduce other alternatives and possibilities to study factors separately by isolating them. Like, knowing these environments, facilitating education and recreation [4];
- Improve the well-being of local populations who live on seafood such as improving catch yield.

#### 2) Indirect objectives of the creation of MPAs:

- Protect the local population against hazards;
- Sensitize tourists and the local population to the importance of biodiversity conservation;
- Generate some non-use values such as non-use values which are also found under the name of passive use values, which are values associated with an intrinsic cultural, heritage, etc.;
- Generate derived returns for the coastal economy through alternatives, such as some types of fishing and tourism which also help reduce the pressure exerted, because marine protected areas are known for their tourist attractiveness thanks to their marine diversity.

#### 3) Other objectives to be added:

- Reserve the rights of use in certain sites in order to reduce the competitive pressure or even give the chance to some groups which have competition difficulties such as artisanal fishermen by promoting their work which can also be integrated into others sectors (for instance, the tourism sector) [5].

It should be noted that there are protected areas within borders created by agreements between countries concerned about the sustainability of their natural reserves and their economies, these common protected areas have the same objectives described above, but also have positive impacts engendered only by these protected areas such as peace and improved relations between these countries [6].

### III. THE TAZA MPA FOR THE BENEFIT OF SUSTAINABLE LOCAL DEVELOPMENT AND THE PROTECTION OF THE COASTAL ENVIRONMENT

In its new impetus, Algeria is integrating a few environmental projects mainly in favor of coastal areas, because the Algerian population is unevenly distributed over the territory: approximately two thirds of the population occupies only 4 to 4.5% of the national territory. In 1,200 km of coast, lives 40% of the population [7].

In Algeria, like in many North African countries, the marine environment enjoys international protection reinforced by national protection.

At the national level, the Ministry in charge of the environment, the Ministry of Agriculture, Rural Development and Fisheries MARDF, and the coast guard services, are, at the institutional level, the three main departments in charge of environmental issues and coastal and marine activities [8].

The promotion of blue growth reconciling protection and economic and social development cannot be realized without coordination between these institutions through the regulatory and technical instruments proposed by each stakeholder.

Internationally, the coastal and marine environment is protected by the United Nations Convention on the Law of the Sea [9].

At the Mediterranean level, Algeria is a signatory to many conventions, this falls within the framework of Mediterranean cooperation, particularly between riparian countries.

Many national parks and protected areas have been created with the aim of protecting the natural heritage such as the present case of the TAZA MPA.

The Taza marine protected area is located in the Province of Jijel in northeastern Algeria. This area is under powerful pressure due to human activities: mass tourism, excessive fishing, illegal fishing, etc. These are the causes that motivated the managers of Taza Park to popularize the importance of the AMP and raise public awareness of the need to protect the environment in order to develop an eco-responsible society [10].

Taza's MPA is made up of three areas:

- Integral zone: 1296.405 ha;
- Buffer zone: 2016.63 ha;
- Peripheral zone: 6.289.965 ha [11].

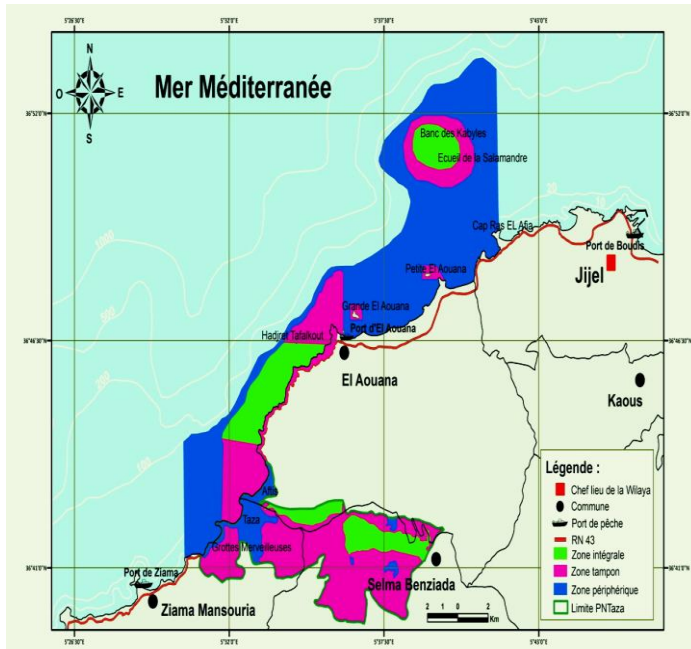


Fig 1 : Zoning of the TAZA MPA

*A. Environmental indicator:*

The calculation of the shortfall resulting from an unfavorable decision of the TAZA MPA project allows us to clarify the environmental indicator and to support our reflection.

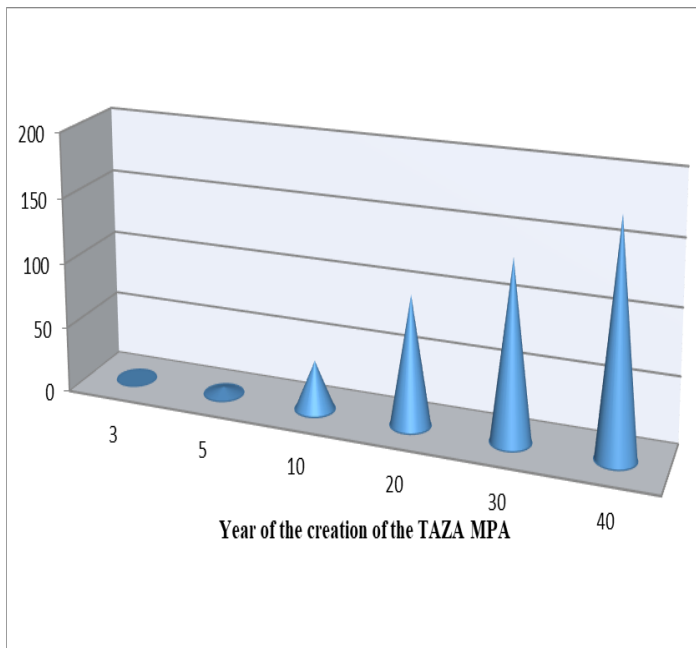


Fig 2 : Calculation of the environmental shortfall following the abandonment of the AMP Taza project %

The figure above shows that there is a shortfall from the fifth year; this value becomes very significant in the medium term. A loss of 37% of fishery resources is notable for this period and continues to increase every ten years with the following estimates: 98%, 135% and 175%. These values cannot be

neglected in order to avoid its negative repercussions on sectors dependent on the health of the marine environment. Our field investigation confirms these predictions. The following graph shows us the production rates of the main types of fish in the Province of Jijel, whose marine area authorized to exercise the fishing profession is 10,166 km<sup>2</sup> [12].

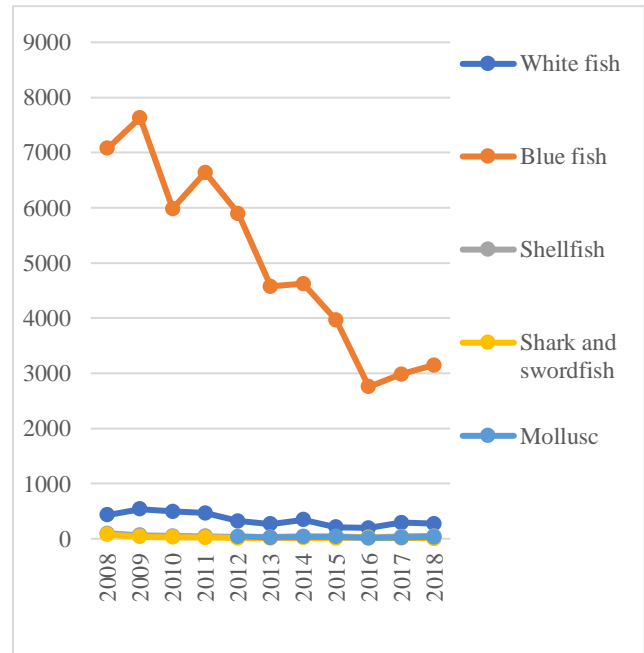


Fig 3: Global capture fisheries production in the period 2008-2018 (ton/year)

Examination of the above graph shows a strong degradation of fishery resources. The improvement in fish production for a few periods is explained by competition, in other words, overfishing which subsequently had very negative consequences from year to year, to the point that even this competition did not make it possible to produce as the first years.

*B. Social indicator*

In order to shed light on this indicator, we have studied the tourism sector because of its importance in improving the well-being of the local population.

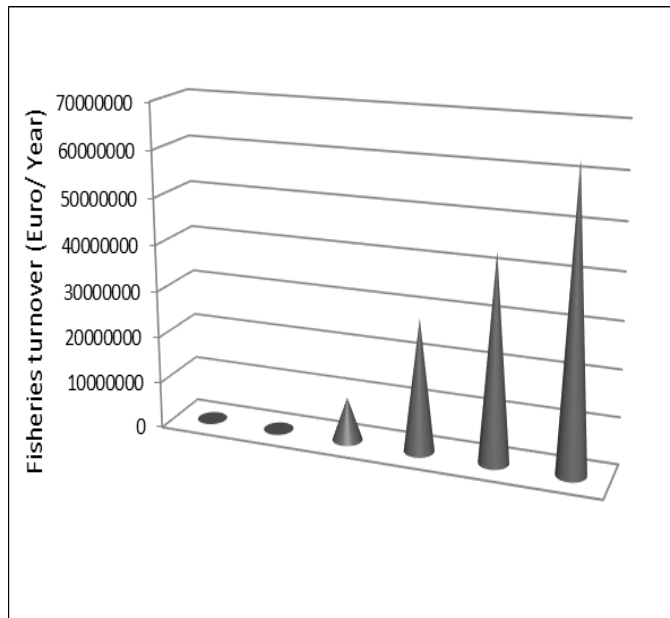


Fig 4 : Calculation of the shortfall in the fishing sector following the abundance of the Taza MPA project

By observing the positive development of the shortfall when the adoption of the MPA project reaching 65 8814 398 € is abandoned, we understand that it does not constitute a hindrance for tourist development, it is a means of increasing tourism receipts thanks to income from exclusive activities of the MPA that can be practiced with peace of mind in its places, such as ecotourism, pesca-tourism, responsible tourism, etc. Although statistics were available on the employment rate in the three municipalities concerned by the AMP, they remain unrepresentative because they are incomplete and sometimes unreliable. In contrast, the tourism directorate claims that AMP has helped create seasonal jobs and promote tourism.

### III. CONCLUSION

The local population aims for development on all fronts, ignoring or forgetting that environmental protection is part of local development. The protection of marine resources, representing the primary objective of the implementation of MPAs, relates to the general improvement of the living conditions of current local populations which ensure their well-being while allowing subsequent generations to maintain their rights on natural resources. The sustainable development of the environmental social duo will therefore be implemented, thanks to the governance of the territories.

The Taza Marine Protected Area is a project of the future par excellence, designed for the protection and conservation of marine ecosystems and to promote local development. The reserve effect allows the full restoration and protection of marine health and mitigates the negative impacts of human activities through the management of fisheries and the right choice of types of sustainable tourism. There has also been an increase in economic income and improved social welfare. So, these are no longer charges, they are investments in natural

capital that have made it possible to increase biomass and generate income allowing MPAs to be self-financing and stimulate the local economy. They also bring back cultural and educational values and develop environmental ethics, etc. In fact, these MPAs are a tool for sustainable development in these three spheres: environmental, economic and social.

However, much remains to be done, in particular in terms of raising awareness among the local population, taking into account the degradation of the natural environment and promoting opportunities. It is important to highlight the benefits of the creation of MPAs in the medium and long term, in order to gain the consultation of the local population. Such dimensions can only be achieved through collaborative work, the ultimate objective of which remains harmonious development ensuring the sustainability of the premises.

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