

Hydrodynamic study of an artificial reef: Case of the Agadir bay, Morocco

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The realization of a scientific monitoring study in reef areas relative to the planning and development of Aquaculture activities at the maritime area of the Agadir bay, two oceanographic measurements campaigns were realized in February and October 2011. These campaigns had for primary goal, the collection of necessary information for monitoring the marine ecosystem variability of the study area suitable for reef installation. These oceanographical study was focused on hydrological, oceanographical, and sedimentological studies. The sedimentological analysis of sediment shows a wide granulometric spectrum of particle size dominated by fine sands with a variable proportion of organic matter. This bay is mainly characterized by a seasonal variability in the water column. In the winter, the absence of the upwelling marked by the thermocline builds a barrier which blocked the upwelled deep waters toward the coast. While in the autumn, the thermocline is near to the surface and facilitates the upwelled cold waters whose rich on nutrients in the Agadir bay which promotes an organic richness on the sediment. The presence of the current North South along the Moroccan Atlantic coast promotes a swirling movement in the bay, which is manifested by a Northern Eastern current in the South and a Northern Western current in the North of the Agadir Bay. The combined effects of different parameters helped to locate the appropriate pattern area for the reefs emersion.

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