

— The multi-use in wind farm projects: more conflicts or a win-win opportunity? —



The pressures on the use of the seashore are steadily rising, not only in developed countries but worldwide. Anthropogenic activity has long impacted the marine continental shelf down to a depth of approximately –200 m. New activities are now affecting this coastal space such as renewable energies, recreational uses and aquaculture in addition to the traditional ones of navigation or fishing. This evolution raises new sources of conflict amongst users which can require state involvement in order to manage the different stakeholders and pressure groups. However, the coastal space still offers a large potential for development for two reasons. Firstly, the physical three dimensional potential of this space enables the whole water column to be used, principally to increase the fishing productivity as in Japan. Secondly, innovative synergies can be created between socio-technical and ecological uses (a “fourth dimension”) such as the eco-design of wind turbine foundations in order to create fish habitat or sea grass settlement.

This new vision in “4D” for the design and the management of coastal infrastructure can potentially reduce the risk of conflict as different uses of the coastal space would not necessarily exclude one another. Indeed, several forms of synergy could be developed such as fisheries with aquaculture or biological sustainability with social acceptability. Until now, limited attempts at such an approach have been done. We suggest this is likely due to the absence of a common eco-engineering vision and the lack of experience amongst biologists and engineers in the co-construction of projects. This eco-engineering, or “green” vision, also takes into account the complexity and resilience of the ecosystem in the long term, if underwater engineered infrastructures are also “eco”-designed to increase ecological gain. This new conception, for development within the coastal area, provides for an increased bio-oriented complexity to engineered structure and therefore a better resistance of the ecosystem in the long term to anthropogenic pressures and a reduction in multi-user conflicts.

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