
How food security is linked to the ecological and economical status of coralligenous habitats of Marseille (France)

Laure Thierry De Ville D'avray^{*1}, Romain David^{†2}, Anne Chenuil^{‡2}, Dominique Ami^{§3}, and Jean-Pierre Féral^{¶2}

¹Institut méditerranéen de biodiversité et d'écologie marine et continentale (IMBE) – Aix Marseille Université, CNRS : UMR7263 – Aix Marseille Université, Campus Etoile, Faculté St-Jérôme case 421 Av. . escadrille Normandie-Niemen 13397 MARSEILLE CEDEX 20, France

²Institut méditerranéen de biodiversité et d'écologie marine et continentale (IMBE) – INEE, Université d'Avignon et des Pays de Vaucluse, Institut de recherche pour le développement [IRD] : UMR237, Aix Marseille Université, CNRS : UMR7263, INSB, INSU – Aix Marseille Université, Campus Etoile, Faculté St-Jérôme case 421 Av. . escadrille Normandie-Niemen 13397 MARSEILLE CEDEX 20, France

³Groupement de Recherche en Économie Quantitative d'Aix-Marseille (GREQAM) – Université de la Méditerranée - Aix-Marseille II, Université Paul Cézanne - Aix-Marseille III, École des Hautes Études en Sciences Sociales [EHESS], CNRS : UMR7316, Ecole des Hautes Etudes en Sciences Sociales (EHESS) – Centre de la Charité, 2 rue de la Charité, 13236 Marseille cedex 02, France

Abstract

According to the IUCN, more than 60 % of the world population live within 150 km of the sea shore and a significant proportion of proteins in the human diet are of marine origin. Some of the marine habitats are very rich in resources provided such as coralligenous habitats, which have been chosen as subject of this study. They are Mediterranean marine ecosystems that are amongst the most important in terms of complexity and biodiversity: more than 1600 species build and depend on those. This biodiversity is strongly linked to ecosystem services. It is essential to economic activities such as professional fishing, where these resources can reach high economic values when they are traded on a market such as some rockfish or lobsters. Indeed it provides directly food resources, but also red coral used in jewellery and a wide range of indirect benefits to human. For example, as nursery habitats, coralligenous habitats are necessary to maintain several species stocks sustainably. However coralligenous habitats are very sensitive to anthropogenic pressure and climate change. Those may alter rapidly and for a long time the quality and quantity of resources they provided. Thus food security is concerned by the ecosystem status, and the economic value of food provided may fluctuate according to this ecological status. The aim of this thesis, starting late 2014, is firstly to identify and list the ecosystem services provided by

*Speaker

†Corresponding author: romain.david@imbe.fr

‡Corresponding author: anne.chenuil@imbe.fr

§Corresponding author: dominique.ami@univ-amu.fr

¶Corresponding author: jean-pierre.feral@imbe.fr

coralligenous habitats, such as food provisioning and seascape building (important for scuba diving activities). It is secondly to better understand the link between their ecological status and the quality of the ecosystemic services provided. The study will focus on the region of Marseille (France). As part of this thesis, an investigation will be conducted on the existing tools used to alert on food security. The possibility to apply these tools on coralligenous habitats will be studied in order to evaluate the sustainability of these resources, and the value of ecosystem services. The expected result is an inventory of the actual gaps in food security alert tools for the coralligenous habitats, which have a much unknown functioning and a low resilience