

Preliminary Risk Assessment of the Impact of the Rising Seawater Temperatures on the Aquaculture Industry in the Mediterranean Sea and the Black Sea Regions

Tuesday, 24th October – 13:00 – Observation Terrace – Poster

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Aquaculture industries in the Mediterranean Sea and the Black Sea regions play a crucial role in meeting the ever-growing global demand for seafood by contributing significantly to the production and availability of diverse seafood products. However, the impact of rising seawater temperatures because of climate change can have an immense influence on the aquaculture sector challenging the sustainability and productivity of these aquaculture activities. The elevated sea surface temperatures can negatively affect not only the metabolism, the growth, the reproduction, and the seasonal production but also increase the overall susceptibility to pathogens (Kim et al., 2021). According to the Food and Agriculture Organization of the United Nations, the water temperature increase endangers approximately 50% of fish species (FAO, 2021). Although knowledge of the impacts of climate change on aquatic ecosystems is essential, research regarding aquaculture is still scarce (Pham et al., 2021). The aim of this present study is to shed light on the imminent risks of climate change on the Mediterranean Sea and the Black Sea aquaculture industry. More specifically, this study aims to provide a preliminary investigation of the impacts of increasing sea temperatures on aquaculture activities and provide insights into potential mitigation strategies by exploring the potential economic and environmental consequences of sea temperature rise.

Keywords: Fish farming, Mariculture, Rearing conditions, Welfare, Fish health, Physicochemical indicators, Global warming, Environmental crisis, Sustainability, Good practices, Sustainability, Productivity.

Acknowledgements: Mr Houssam Hamza, aquaculture officer at the General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations is kindly acknowledged for his support in this study.