



Chapter 5

The Sustainability of Seafood Market Under the Attack of Invasive Alien Species: A Review of Turkish Marines

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ABSTRACT

This study aims to review the risk of invasive alien species in Turkish marines in the context of sustainable seafood market. Thus, this study investigates the challenges of invasive alien species on seafood market and marine biodiversity. By using classifications, tables, and figures, this study will determine the current profile of Turkish seafood market due to the risk level with alien species. The open access data obtained from Turkish Statistical Institute (TURKSTAT) and FAO (Food and Agriculture Organization of the United Nations) will be used to give main indicators for Turkish seafood market. Then, recent reports and news will be used to determine the efficiency of the implications and policies to fight against to alien species in Turkey. By reviewing recent news and reports, it is thought to give a holistic approach for the related literature.

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INTRODUCTION

The recent literature has shown that food security and water security were both vital goals to be achieved in the long term. In other words, food security and water security are related together to design sustainable future. Water sources (freshwater, clean and drinking) support the sustainability of food sources such as agriculture and aquaculture. In addition, freshwater sources are vital need for the sustainability of biodiversity and the humanity. There are many challenges in achieving water security such as global warming, climate change, environmental pollution, over-consumption etc. (Bostancı and Yıldırım, 2022; Yıldırım et al., 2022; Yıldırım et al., 2018). Keeping the higher quantity and quality of wetlands seems to be so hard while the demand of water is rising. On the other side, wetlands provide alternative food sources for many countries by aquaculture and fishing. At this point, it can be said that policy makers should protect marine wetlands to support water security and food security in the long term.

The impact of climate change and invasive species are considered to be important variables that lead to the destruction of the local ecosystem, especially in the seas. Although the depletion of food resources and local biodiversity are the leading effects of invasive species, it is a fact that the seas and countries are also affected economically (Occhipinti-Ambrogi, 2007). Both scientists and policy makers say that the introduction of alien species should be seen as the biggest threat that countries will face in the future. When a increase in the introduction of foreign species, there will be a decrease in the population of local biodiversity and food sources (Bax et al., 2003). Sustainable seafood market is seen as an important food market as supporting food security in general. Especially, seafood market is primary food source for developing countries and least developing countries in the world. On the other side, many developed countries benefits from seafood to support society's health in the long term (Yıldırım and Yıldırım, 2021; Yıldırım and Kaplan, 2020). Turkey which produces 40 percent of the global supply in the global fish producers market, took its place in the ranking as the ninth country due to its higher production of sea bass and sea bream. Rainbow trout has the largest share in freshwater fish production. However, the country's exports of fish, crustaceans, molluscs and other aquatic invertebrates have continued to increase in the recent period, according to data from TURKSTAT. In addition, bne IntelliNews (*news from Eastern Europe, Eurasia, the Middle East and Africa*) reported that Turkish aquaculture exports were reported as \$962.23 million in 2019 and over \$1 billion in 2020 (The Fish Site, 2021). Seafood market is an important industry for the European region. However, the growth of EU seafood production did not show great performance in 2018 and 2019. To sustain sustainable seafood market including low priced seafood with enough quantity, is almost related to sustain seafood import (European Union, 2019). According to

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