

## Fishing capacity of the southeastern Black Sea anchovy fishery

*Kakhaber Bilashvili*<sup>a</sup>, *Maya Metreveli*<sup>a</sup>, *David Castilla-Espino*<sup>b</sup>, *García-del-Hoyo, J.J.*<sup>b</sup>

e-mail: [kakhaber.bilashvili@tsu.ge](mailto:kakhaber.bilashvili@tsu.ge)

<sup>a</sup> Department of Geography, iv. Javakhishvili Tbilisi State University, 1, Il.Chavchavadze Av., 0179, Tbilisi, Georgia

<sup>b</sup> Quantitative Methods for Business and Economics, Statistics and Operations Research – MEMPES, Universidad de Huelva, Plaza de La Merced, 11, 21071 – Huelva, Spain

The anchovy fishery of Georgia experienced a considerable decline at the end of the 1980s due to a regime shift in the Black Sea, virtually disappearing during the 1990s. At the beginning of the 2000s, it recovered, encouraging the Georgian state to hire out a significant part of the annual Total Allowable Catch (TAC) to Turkish vessels. This practice resulted in a significant reduction of the anchovy fish stock at the end of this decade due to the overcapacity of the fleet. Since late 2006, the Ministry of Environment Protection and Natural Resources is implementing a new licensing system based on the auction system. According to this management system, 4 winning bidders own the right to fish an annual TAC for 10 years. The bioeconomic sustainability of this fishery and the success of this management framework is subject to controlling the fishing capacity of the fleets that exploits this fishery. This paper is aimed at measuring the fishing capacity and overcapacity of this fleet during four seasons in the period from 2005 to 2009. Fishing capacity, capacity utilization and technical efficiency are estimated using Data Envelopment Analysis (DEA). This research concludes that fishing capacity has increased since the implementation of the 2006 management framework and that the fleet has reached a significant level of overcapacity in 2008-2009 season suggesting the necessity of international cooperative right based fisheries management to guarantee bio-economic sustainability.