

**PILOT STUDY OF THE ECONOMIC PERFORMANCE OF COASTAL PURSE  
SEINERS IN MOROCCO.****-Case of the Atlantic Center of Morocco-**

*Abdelkadir KAMILI\**, *Amale LAABDI\**, *Abdelhak LAHNIN\**, *Hamid CHFIRI\**  
*Gakushi ISHIMURA\*\*\**, *Tadanori FUJINO\*\**, *Naoki TOJO\*\**, *Kazushi MIYASHITA\*\*\**, *Anwar TALIBI\*\*\*\**

Email address: kamili\_s@yahoo.fr

\* *Agadir Regional Centre of INRH, Morocco.*

\*\* *Japan International Cooperation Agency (JICA).*

\*\*\* *Hokkaido University, JAPAN.* \*\*\*\* *Assistant to the INRH-JICA project.*

**EXTENDED ABSTRACT**

Small pelagic fishery is one of the socio-economically important fisheries in Morocco. In 2010, it accounts for more than 80% of the total landing weight, corresponding to approximately 0.17 billion €. Considering this fishery's large contributions to employment, trade, transportation and processing industry, sustainable development of this fishing sector is aimed as part of national vision (Halieutis strategy, 2010). Based on the national vision, socio-economic surveys and analyses are anticipated to contribute to develop an effective policy and to evaluate the impact of the current measures. "Institut National de Recherche Halieutique" (INRH), Morocco and Japan International Cooperation Agency (JICA) implemented a capacity development of fisheries resource monitoring for sustainable management of small pelagic resources in the Kingdom of Morocco since July 2010. As a part of this project, we focus on the coastal purse seiners in the Atlantic Center of Morocco (Agadir and regions). In this region, coastal purse seiners account for 62% of the vessels number fishing small pelagic fishes (Trawlers 19%, small scale fisheries 18% and others 1%) and, in 2010, they has produced about 96% of the total landings. We aimed to clarify structure and composition of costs to estimate the profitability rate and to examine the generated added value.

We analyzed 128 coastal purse seiners (19% of all coastal purse seiners operating in the Moroccan Atlantic Ocean) as an economic system (fisherman, fishing vessel, resources and market) of creating wealth for the benefit of the different stakeholders. In order to analyze the economic performances of Moroccan coastal seiners, we examined the most likely dominant economic indicators by boat, such as employment, fishing effort, productivity, operating costs, and value added. Technical and economic data are collected from government and also from interviews and socio-economic surveys with fishermen and accountants. Reference year was 2011.

Boats sampled worth an average capital of 361,191€ per boat. Their annual production is estimated on average of 1852 tons (SD±1061 tons) by boat corresponding to a value of 261,750€ (±157€). These boats perform, on average, a total fishing effort estimated by 128 days (±38 days) and employ an average crew of 35 people (±5). They were characterized by an average tonnage of 78tx (±18tx), an average engine power of 410cv (74cv) and an average age of 18 years (±12 years).

Small pelagic fishes have three principal markets which are: the fishmeal and fish oil industry (54%), canning industry (26%) and fresh consumption market (16%). Over 60% of sales value is generated through canning industry and fresh consumption market.

The average price of the same specie changes according to its destination. For example, fish destined to the fishmeal and fish oil factories, are sold at lower prices because of their quality. In this category of fish, we find principally sardines (0.07 €/kg) and also anchovy, mackerel and round sardinella with an average price of about 0.08 €/kg. The differences between the prices of the same specie vary from one specie to another according to the target market including canning, freezing, fishmeal and oil. Indeed, differences in average prices for anchovy are higher compared to those of other species.

The costs of coastal seiners can be divided into two main categories: the first category is the common costs supported by the ship-owner and the crew members. It includes all costs directly related to the fishing activity, especially: fuel (36%), social security levies (38%) and production taxes (14%). The second category is related to costs borne only by the ship-owner. It includes all annual costs relating mainly to the insurances (46%) and repairs (31%). The costs of this second category are taken after deducting the common costs and the share due to the crew (60%).

In this study, we found that vessels have generated average annual added value of about 0.18 million € by vessel. Their contribution to wealth creation at national level is very important. However, their economic performance can be influenced by size, structure operation costs and destination of landings because:

- Profitability rate is higher for large vessels (new ships, 9.5%) compared with small vessels (old ships, -0.03%);
- Structure of operating costs, specifically the common costs of fuel and social levies and also the ship-owner costs relating to insurances and repairs;
- Destinations of landings affect directly the performance levels achieved considering the variations of prices.

The comparison of the average profitability rate (net benefits/capital) of the coastal purse seiners calculated in this study, 5.17%, and the 6.13% in KAMILI (2006) potentially indicated a recent decline. This decline could be explained by the general increase of the input prices. We speculate that especially changes in fuel price have influenced the profitability; from 0.341€ in 2004 to 0.559€ in 2011 against nearly stable prices of fishing products (weighted average price of main species of small pelagic fish was 0.16€ in 2006 and 0.17€ in 2011).

**Keywords:** Small pelagic fishery, coastal purse seiners, socio-economic indicators, Agadir, Morocco.