Session K: Fuel consumption as a proxy for the assessment of nominal effort and variable costs: application to the French West Indies small-scale fleets

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Problem

In many data collection systems, total effort is often inferred from sampling schemes at landing points or calculated from fishing forms or log-books which do not provide accurate information on the vessels fishing activity.

This problem is especially significant in small scale fleets where fishermen behaviour and related fishing activity is heterogeneous. The Mains explanations for the reported level of activity of small scale coastal vessels at EU level are:

Availability of the stocks, fisheries management regulations (area, seasonal closures, ...), meteorological conditions due to the size of the vessels, environmental constraints in coastal areas, economic incentives especially marketing, other economic opportunities, ...

Linked to these constraints, fishers may develop a part-time fishing activity.

As fuel consumption by fishermen is often subject to tax relief, it is registered by administration and can be used to improve and cross checked nominal effort measures (hours at sea, days at sea).

Application

Lesser Antilles

Small Scale Fleet, 7 m av. length

Guadeloupe island

(Désirade harbour)

Materials and methods

Fuel purchases per vessel and per day (population)

Vessel engines power and types (fuel / diesel and strokes) for the population

Fuel consumption per trip and gear used (sample)

Objectives

- Engine hours at sea per vessel
- Number of trips per vessel

Monthly fishing calendar per vessel of the population (gear-target species-areas)

Results and perspectives

- Estimated engine hours per month (Désirade fleet)
- Develop an algorithm to assess the number of trips per vessel
- Heterogeneity of fishing activity

020 40 60 80 100 120 140 160 1 2 3 4 5 6 7 8 9 10 11 12

Months

Vessel activity

Snorkeling
Longline
Hook and line
Inactivity
Tramel net
Gillnet
Traps
Hook and line FADs
Trolling line

0 20 40 60 80 100 120 140

Vessel activity


Liters

Daily consumption of fuel for two vessels

Fuel purchases per vessel and per day (population)

Fuel consumption per trip and gear used (sample)

Objectives

- Engine hours at sea per vessel
- Number of trips per vessel

Monthly fishing calendar per vessel of the population (gear-target species-areas)