

Theme Session M – Increasing energy costs—another challenge for fishers and managers

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Overview

Energy costs are one of the main drivers in fishing operation and global indications are that fuel prices will remain at inflated levels in the long term. This will have a major impact on the profitability of most fisheries. Without adjustments the financial viability of many fishing entities is questionable. The environmental impact from fisheries is in many aspects directly proportional to energy input. Development of energy efficient fisheries is therefore not only an economic question but also has an environmental conservation issue.

The theme session had the objective to address technical, economic and managerial aspects on how to counteract the difficulties arising from increasing energy costs including improvements in fishing gear, changes in fishing operations, the use of alternative energy sources and using alternative fishing methods. It also addressed how fuel related changes in fishing activity and fleet dynamics may impact on stock assessment and fisheries management.

Contributions

The session was well attended with up to 50 participants. Eight contributions were accepted as papers, although one paper was subsequently withdrawn. The papers covered the following:

- Development of energy efficient fishing gears and the use of alternative fishing methods;
- Measures to save energy in fishing operations;
- Design concepts for low energy fishing vessels;
- Social and economic effects of increases in fuel costs;
- The potential for alternative energy sources e.g. bio fuels and additives;
- Fuel driven changes in fleet dynamics and their impact on fisheries management.

Theme Session Highlights

Several papers (M:03, M:04, M:09 and M:08) illustrated how fishermen had adapted to rising fuel costs in specific fisheries or countries, while one paper (M:04) through a simulation model showed how fleets would evolve given three price scenarios i.e. constant price, a linear increase and an exponential increase. The model predicted that under each scenario initially fleets would reduce in size as revenues reduced but under the constant and linear price increase scenarios after this initial decline, fleets would adapt and increase again as revenues associated with less vessels competing for fish. Under the exponential price increase, however, no such fleet recovery was predicted.

One case study (M:03) showed how fishermen had attempted to increase harvesting efficiency by pooling resources and this had led to fuel savings. Examples from Belgium, France and the UK (M:04, M:08 and M:09) indicated how attitudes to fuel prices had changed and had sought to change operational practices such as reducing steaming speed, landing in different ports and being more systematic in carrying out basic engine and hull maintenance. Also there was evidence of fishermen modifying their existing gears to be more fuel-efficient by decreasing drag or adopting alternative low energy fishing gears such as jigging, potting or other static gears. However, the example of the Belgium beam trawl sector showed that this was not always possible, as the design of such vessels does not lend itself well to changing to other

gears. Attempts had been made but only minor success with some of the smaller beam trawl vessels had been seen, since fuel prices had risen sharply.

Alternative gears (M:02 and M:06) were put forward in several presentations as being one way of reducing fuel costs and while there was no doubting such methods were fuel-efficient in many cases they led to reduced revenues that did not make them attractive to fishermen. One case study that compared trawling to jigging fishing showed that substantial savings could be made in fuel and engine maintenance costs but due to the fact that there were high initial set up costs and increased gear maintenance costs coupled with variability in catches, this method was seen as option but only a seasonal basis. Product differentiation and niche marketing of fish caught using environmentally, fuel-efficient methods was seen as a potential way to offset reduced fish catches with alternative gears but this was still in its infancy.

The French case study (M:09) also showed how direct subsidies provide by government to fishermen to offset increasing fuel prices had not had the desired effect. In France such a system had paradoxically resulted in increased usage by larger high-powered vessels as the State aid had effectively reduced fuel prices paid by the fishermen to artificially low levels. Such schemes are therefore felt to be inappropriate.

The final presentation (M:01) examined the potential for using bio-fuels to power fishing vessels. Trials in the UK had looked at two potential bio-fuel products. The first was Straight Vegetable Oil (SVO) which is oil derived from planter matter. The second fuel source is bio-diesel, which is derived from SVO via the process of trans-esterification. The trials carried out that these products could be used successfully on fishing vessels with no major increases in engine wear and tear or performance experienced. However, there are still issues of cost and supply of bio-fuels and increased demand from other industries is seen as a major drawback given limited worldwide supply.

One poster (M:10) submitted for the session indicated alternative fisheries for *Nephrops* in Greece using pots as a viable alternative to nets and trawls.

Conclusions

- The main conclusions from the session were as follows:
- Fuel costs may range from around 10% (passive gear) to over 60% (beam trawl) of total costs.
- Fuel prices more than doubled over the period 1994 to 2005 and then doubled again to current price levels in a much shorter period of time.
- The impact from increasing fuel costs is often overestimated, as fishermen tend to adapt over time.
- The impact on métiers depends largely on vessel type and gear type used.
- There is no one solution to rising fuel prices and different sectors of the industry have adapted in different ways through changes in operational and strategic practice, modifying existing gears to be more fuel efficient or changing to alternative fishing methods, particularly static gears.
- Alternative gears and methods may definitely be more fuel-efficient but are not economical attractive in many cases.
- Development of niche markets through better marketing of fish landed using environmentally and fuel efficient methods are felt to be one way to offset reductions in catches using such methods.
- Technically bio-fuels can be used to power fishing vessels but currently provide limited opportunities for the fishing industry due to issues relating to cost and supply.
- Subsidies provided by governments to reduce the price of fuel to fishermen do not necessarily work and have been shown in fact to increase fuel usage.