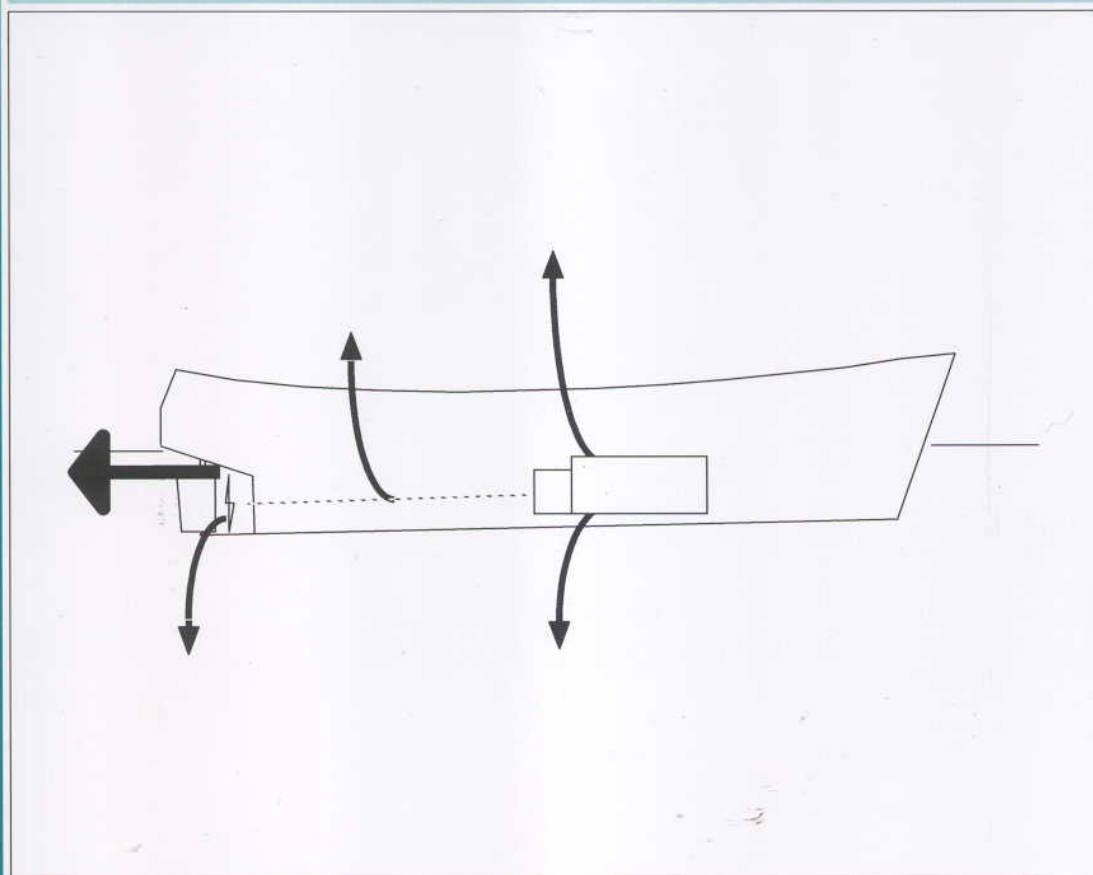


Fuel and financial savings for operators of small fishing vessels

FAO
FISHERIES
TECHNICAL
PAPER

383



Food
and
Agriculture
Organization
of
the
United
Nations



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by
J.D.K. Wilson
Maputo, Mozambique

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Rome, 1999

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PREPARATION OF THIS DOCUMENT

This guide is not a result of new original fieldwork but draws on much of the research and experience of the past two decades, updated where possible to include new technical developments. The author is indebted to many people who have helped in one way or another in the writing of this publication. They are too many to mention individually but suffice it to say that, without their guidance and assistance, the task would have been infinitely more difficult.

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Finally, I owe particular thanks to my father, Robin Wilson, for his patience with the fax machine and the many volumes of documents.

Explanatory note

Nomenclature

RPM	revolutions per minute
SHP	shaft horsepower
MCR	maximum continuous rating
nm	nautical mile
HP	horsepower
kt	knot (1 nautical mile per hour)

Rules of thumb, guidelines and quick approximations are presented in highlighted boxes:

- **The gearbox should be chosen to give a maximum of 1 000 RPM or less at the propeller**

Distribution:

- FAO Fisheries Department
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ABSTRACT

Fishing continues to be the most energy-intensive food production method in the world today, and it depends almost completely upon oil fuel-based internal combustion engines. There are as yet no signs of any other energy source that could substitute the internal combustion engine in either the medium or short term. The industry continues to be exposed to global fuel prices and it cannot be assumed that these will remain stable indefinitely.

Small-scale fisheries account for nearly half of the world's fish production and, although they are generally more labour-intensive than larger industrial fisheries, they are increasingly affected by energy costs. In developing countries, in spite of the energy conservation initiatives of the 1980s (subsequent to the dramatic rise in the cost of fossil fuels), mechanization continues to increase. Fuel costs have ever more influence not only on consumer prices but also on fishermen's and boat owners' net incomes. When levels of employment and cost-sharing systems are considered, it becomes even more important from a social perspective to improve and maintain energy efficiency within small-scale fisheries.

This guide presents information on the key technical areas that affect energy efficiency, but only part of the information presented herein will be applicable to any particular fishing situation. The guide is not a result of new original fieldwork but draws on much of the research and experience of the past two decades, updated where possible to include new technical developments.

The guide is divided into two major sections: the first relates to changes in operational techniques rather than changes in technology; the second presents information of relevance to vessel operators who are either considering the construction of a new vessel or overhauling and re-equipping an existing vessel.

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