This note assesses the direct impact of fuel price fluctuations on ongoing fishing operations of domestic fishing fleets in Pacific island countries, covering changes in the financial performance and operating patterns. Policy options for government and recommendations for key players are offered.

### Fuel Supply Markets and Exposure to Fuel Price Fluctuations

Almost all fuel for domestic fleets and locally based foreign fleets in the Pacific is supplied via domestic bunkering. Sourced through global distributors who stock in-country tank farms that they usually own themselves, fuel is then supplied to the fishing industry either via public fuel wharfs, company fishing wharfs, or retail outlets. In general, the market for fuel in the region is small, fragmented, and diffused and countries suffer from negative economies of scale, made worse by the very small number of suppliers.

Fuel price impact on fishing has fluctuated considerably among fisheries and countries. While the largest component of domestic fuel price—the international bulk price—has risen and declined dramatically over the past 10 years, very significant variations in fuel prices occur between Forum member countries, the lowest price being in Kiribati ($0.90/liter) and the highest in Vanuatu ($1.87/liter).

Of the main categories of fishing gear used in the region, tuna longliners have the highest fuel consumption per ton of catch—on average, over 4 times as much as purse seiners. Small-scale coastal fisheries fall between the two, consuming about twice as much fuel per ton as purse seiners.

The costs of fuel per dollar of catch value show similar differences, but less pronounced, because prices of some fish products have increased more than others. The financial impact of increases on longliners is still greater than that of purse seiners but the difference is very much smaller than that in specific fuel consumption per ton of catch, because of increases in fish prices. Artisanal fishers are the most financially exposed of all the fleets analyzed.

The exposure of aquaculture to energy cost fluctuations varies substantially: pearl aquaculture is estimated to consume only about $3 per $100 of product value, and intensive penaeid shrimp aquaculture is estimated to consume 1.7 t of fuel per ton of product, but if feed production were to be taken into account, its fuel consumption would be even higher.

Changes in operations as a result of increasing fuel costs in the offshore purse seine sector have been virtually zero; increased technical efficacy and favorable prices for skipjack and yellowfin tuna offset increased fuel costs. For domestic-based longliners that faced increases in fuel prices without product price increases while experiencing drops in catch per unit of effort, modest operational changes were made. Many small-scale fisheries facing higher fuel costs adjusted by reducing the distance traveled and changing gear.

### Policy options and tools to reduce the impact of fuel price fluctuations

- Competitive and efficient sourcing of fuel, either through competitive processes or via a regional bulk supply arrangement.
- Direct impact on operating costs via the adjustment of taxation and excise on fuel. However, there are potentially negative impacts, including reduction of fiscal receipts, lowering of incentives to use fuel efficient technologies and practices, and suppression of changes in comparative advantage (or lack thereof) and competitiveness of Pacific fisheries.
- The establishment of fiscal and other incentives to encourage operators to adopt fuel-saving measures or more fuel-efficient fishing technologies, diversify fuel usage, and to raise awareness through education and training.

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1 Gillett, R. 2009. Fisheries in the economies of the Pacific island countries and territories, ADB, Manila. Excerpts from the Executive Summary and Appendix 5. The views expressed in this book are those of the authors and do not necessarily reflect the views and policies of the Asian Development Bank (ADB) or its Board of Governors or the governments they represent. ADB does not guarantee the accuracy of the data included in this publication and accepts no responsibility for any consequence of their use.
Recommendations

- Reestablish regional fuel price collection and reporting system. There is a lack of basic data necessary to monitor the development and impact of fuel prices and availability in the Pacific region. Previously, this function was performed by the Forum Secretariat through the Pacific Fuel Prices Monitor, but the data have not been updated for several years. Data collection should be integrated, as far as possible, into national government data collection systems and the process of reporting automated, or at least standardized.

- The fish-to-fuel exchange indicator should be compiled and analyzed on a regular basis. This tool, illustrating the terms of trade, is useful for tracking the basic financial status of the fishing industry, especially with respect to the impact of changes in relative fuel and fish prices. The measure could be used as a tool to indicate when and where interventions, such as the temporary suspension of excise, might be justified. The data required for this exercise are already being collected by some national governments and regional bodies, such as Forum Fisheries Agency.

- Expand collection of market data for small-scale fisheries. Being performed in only a few countries, this information, together with premix or gasoline prices should be collected and used to monitor the fish-to-fuel exchange for important small-scale fisheries. The system could be supported directly by national budgets or via regional organizations.

- In the absence of a regional fuel supply arrangement, national governments should continue to promote competitive fuel supply. It can be promoted through competitive tendering for supply contracts, regaining or retaining control over key infrastructure, such as fuel wharves and storage facilities, and the establishment of a suitable facilitating regulatory framework.

- Change in the basis for fuel taxation should be considered. Governments should examine the economic and political acceptability of changing the taxation structure on fuel from one based on percentage of value to a fixed rate per unit of quantity. This would reduce the impact of international price fluctuations on fuel prices (to the benefit of both national industrial fisheries as well as national consumers of products from small-scale fisheries). It would safeguard government receipts but be vulnerable to exchange rate fluctuations between national currencies and the US dollar.

- Continue the monitoring of the development of alternative fuels, especially coconut biofuel. The Forum Secretariat should resume the monitoring of the development of biofuels and their markets and serve as a clearing house for published data and research that might allow Pacific island countries to replicate successes from other parts of the world. Such support can be provided on a national or regional basis, as developments in alternative fuels may benefit smaller countries through assurance of regional supply in the absence or reduction of imported petroleum-based products. A program to trial such fuel in a commercial fishing vessel should be considered.

- Governments should take a more active role in promoting fuel-saving technologies. Where value-added tax and duty are still applied on outboard engines, exemptions should be considered for fuel-efficient (4-stroke) engines when purchased for use in small-scale fisheries. The same should be applied to other equipment specifically targeting improvements in energy efficiency, such as heat recovery. Where either government or the private sector has experimented with innovative fuel-saving mechanisms (such as flapped rudders) results and experience should be compiled and presented in an appropriate public forum.

- Governments should consider re-equipment loans to the industry, under preferential terms, to support the installation of modern and more efficient engines. It is understood that there are rarely discrete funds available for such purposes; however, such institutions as national development banks might be more amenable to such loans if part of an overall government program to reequip and improve the financial viability of the domestic industry. Other avenues, such as allocation of fisheries foreign aid grants, should also be explored for this purpose.

- The provision and maintenance of fish attracting devices for use by small-scale fisheries should be a priority for national governments in support of domestic fisheries. The need for fish attracting devices to support small-scale fisheries is vital to the maintenance of some of these in the region, including those in PNG and Fiji Islands. The need is underscored by the high degree of exposure of such fisheries to fuel price increases and fuel usage.

- A focused regional program should be developed to heighten awareness of fuel price impacts and mitigating measures. The program should be aimed at both government and the private sector to raise awareness of the degree and nature of impacts of fuel price fluctuations in fisheries and the measures that can be taken to minimize them. Such a program might entail organizing meetings and seminars and producing suitable training and informative material.

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