

## **Where have all our fish gone? Utilising our Fisheries resources, without exhausting them.....**

Papua New Guinea is blessed with rich marine resources, including productive reefs, deltas, mangroves, seagrass beds, as well as high seas. These have made an immense contribution to the livelihood of communities around the coasts and islands since this land was settled over 40,000 years ago, providing food and increasingly jobs and incomes, from fish, crustacean (such as prawn), shells (notably trochus), beche de mer and bivalves, such as oyster/pearls. The marine habitat also nurtures the tourism industry, with its immense potential, notably the dive industry. The West and Central Pacific tuna resource is the largest (remaining) in the world, producing slightly over half the marketed tuna in 2004, or around 1.7 million metric tonnes. Much of the regional tuna stocks concentrate in PNG's maritime zone (EEZ) most years, although migrating seasonally, especially into more easterly waters during El Nino years.

Fisheries, as with tourism, is a sustainable industry, if managed right. There are sound prospects for PNG from aquaculture (fish farming), although that does require careful management. The vast bulk of global fish supply still comes from natural stocks. These resources are finite, however, and must be harvested within sustainable limits if we are not to exhaust them. Demand is expanding as the global population and incomes grow, especially coastal populations dependent upon the sea. Our seas and coastal habitats are also increasingly subject to various damaging impacts, including climate change and pollutants, undermining their health and capacity to support large populations of sea-life.

The wider public interest is to maximise the sustainable harvest of marine resources (in terms of value, rather than simply quantity), without over-harvesting and causing stocks and subsequent harvests to decline or collapse. Worldwide, however, there has been little success in setting the right harvest level, and most major fish stocks have been over-harvested, severely reducing subsequent production and, in some cases, as with Newfoundland's cod, major industries have collapsed almost overnight. Fishing industries have increasingly turned to obscure, particularly deep water species, which cannot support high catch rates. Some coastal marine resources, such as beche de mer, have already been nearly exhausted in parts of PNG. However, the Western Pacific tuna industry has long been considered as having potential for further expansion, without exhausting the resource. There is now evidence, however, that the limits for some major target species in this region, notably bigeye and yellow-fin tuna, have already been exceeded, particularly since 2004.

Managing marine resources requires knowledge, commitment and international cooperation to set suitable harvest ceilings and enforce them. Such firm management has proven hard to apply elsewhere in the world in the face of short term commercial and national interests, despite clear benefits for all parties. PNG needs to heed the lessons from elsewhere and take stock before the situation becomes critical.

With an apparent weakening of governance over fisheries management in PNG in recent years, the NFA is reputed to have allocated excessive licences, largely to overseas-owned

purse-seiners (and distant water long-liners and pump boats), in breach of established international agreements, whilst other approvals have been granted on a “trial” basis, targeting other species and using potentially destructive methods. The high by-catch in PNG waters of slow reproducing fish (including shark) and other marine life is also wasteful, unnecessarily undermining future fisheries and other economic interests. If both the regional resource and fishing nations breach agreed rules and ceilings, they and their fishing industries are all ultimately losers. The first to lose out here from depleted stocks and other factors, such as high freight costs, have been the locally-registered long-liners. The growth of this fleet was only recently hailed as PNG’s success story, with the value of their harvests generally exceeding lower-priced skipjack.

When sustainable harvest levels are exceeded less hardship is imposed if prompt remedial action is taken to reduce harvests a small amount to remain within limits, than when the industry is forced to slash or even halt harvesting, once stocks are severely depleted.

There are a number of constraints, however, to adhering to sustainable limits. Although knowledge of marine ecology has increased considerably over recent years, it remains very limited, especially factors triggering cycles of reproduction or stock collapse and the relationships between different species. For example, over-harvesting the larger tuna, notably bigeye, yellowfin, and mature skipjack, enables greater populations of smaller skipjack to survive and be harvested, at least in the shorter run, although their net value is less, even if larger quantities (in weight) are caught.

The next problem is management of the resource. It is hard enough for a community to manage its own coastal resources sustainably, with increasing numbers fishing, and neighbouring communities encroaching. On the high seas there are many participants from different countries and companies competing for the pelagic resources, notably tuna. Whilst the resource nations (notably signatories to the Nauru Agreement – including PNG) and main fishing nations wish to maximise benefits from the resource, partly at each others’ expense, it is ultimately in their interest to ensure that sustainable catch is not exceeded, and if so, promptly curtailed. Most fishing operators have an interest to maximise their catch, but not deplete the resource. It is in their combined interests that the sector is effectively regulated and not over-exploited.

Some fishing companies, however (as with certain logging operators), retain a shorter term horizon, with an incentive to over-harvest whilst costs are low and profitability high, regardless of the longer term consequences to the resource. They merely withdraw from fisheries when the costs are excessive and stocks become scarce, reinvesting in other, by then, more lucrative business activities. For most industry participants such mobility is unrealistic, given their high capital investment, and they need to ensure the resource is sustained.

In addition to its own fisheries law, PNG is signatory to regional management agreements (notably the Nauru and Palau Agreements, monitoring harvests and vessels through the SPC and FFA) and international fisheries agreements (West and Central Pacific Fisheries

Convention) aimed at managing the tuna sustainably, through harvesting ceilings to respective member nations for allocation in turn for vessels operating in their waters.

PNG and its neighbours have focussed upon increasing the benefits from harvesting their resources through increased domestic processing, plus shore visits, maintenance, local employment as crews and other means. PNG needs to ensure the incentives it offers aren't excessive, undermining established parts of the industry, or providing negative net benefits or proving non-viable in the longer term once preferential market access arrangements are eroded.

In the end it is critical that PNG and its neighbours adhere to well prepared and progressively updated national and regional fisheries management plans and ceilings. This requires a high degree of regional cooperation, integrity and transparency over licensing, which seems to have been inadequate in the NFA's operations of late, as well as investment and commitment to effective monitoring and enforcement. This country, but also our Pacific neighbours, distant water fishing nations and consumers are the losers if we, or other participants harvesting the region's fisheries resources cheat and extract too much, at others' expense.....Such behaviour has been termed the "tragedy of the commons" where commonly owned resources are exhausted by "freeloaders" with a lack of genuine commitment to cooperation and self-restraint.

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