

Trawling vs Longlining: Finding a balance

The contentious issue of how best to apportion the hake total allowable catch between the longline and trawl fisheries in South Africa and Namibia was the subject of a two-day workshop that took place at the University of the Western Cape in May. **Claire Attwood** was there.

The workshop was organised by a team of regional and international researchers who have been tasked by the BCLME Programme to determine the optimal harvest ratios for the hake fisheries in the Benguela region.

The BCLME Programme is an initiative that aims to improve the capabilities of Angola, Namibia and South Africa to manage marine resources and address transboundary environmental problems. It is funded by the Global Environment Facility (GEF) and implemented by the United Nations Development Programme (UNDP).

The BCLME Programme has allocated \$98 100 (R686 700) to the Fisheries Economics Research Unit (FERU) at the University of British Columbia to complete a study of the hake fisheries and recommend optimal harvesting ratios for the trawl and longline fisheries in South Africa and Namibia.

This is just one of a range of different studies that is being funded by the BCLME Programme.

Researchers from FERU are collaborating with academics from the Department of Natural Resources and Conservation at the University of Namibia; the School of Government at the University of the Western Cape; and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) at Lowestoft Laboratory in the UK.

Their objective is to incorporate economic and social factors into existing management models and provide information that will assist resource managers to achieve the best long-term ecological, economic and social outcomes.

Maximising the fishery

The Cape Town workshop was opened by Professor Ben Cousins, director of the Programme for Land and Agrarian Studies at UWC. Dr Johann Augustyn, acting chief director in the Department of Environmental Affairs and Tourism, was asked to provide the South African government's perspective on the project.

Augustyn acknowledged that hake is the most valuable fishery in South Africa and said that Marine and Coastal Management (MCM) is committed to maximising the benefits from the resource.

He said that 10 percent of the hake total allowable catch is allocated to the line fisheries and he emphasised that this was not likely to change before long-term fishing rights are allocated in 2006. However,

■ **Left above: Dr Trevor Hutton, CEFAS; Professor Rashid Sumaila and Professor Gordon Munro, both of FERU.**

■ **Left: Dr José de Oliveira, CEFAS; Dr Mike Bergh, OLRAC; Svein Munkejord, MCM.**

MCM is taking a strong interest in the project and has asked to be advised on a range of different TAC apportionment scenarios.

Professor Rachid Sumaila of the Fisheries Economic Research Unit (FERU) at the University of British Columbia is the principal investigator for the BCLME project. He introduced the project and outlined the objectives of the workshop.

Sumaila highlighted the importance of local knowledge and said that the researchers depend on contributions from the fishing industry and scientific community. He said that the workshop was designed to provide a platform for obtaining stakeholders' perspectives on the hake fisheries, discussing research plans, asking for feedback from stakeholders and identifying the availability of data.

Sumaila outlined the research methodology for the project. It will involve analysing the socioeconomic aspects of the trawl and longline fisheries and developing analytical bioeconomic models to study a range of different harvest ratios.

Managing the resource

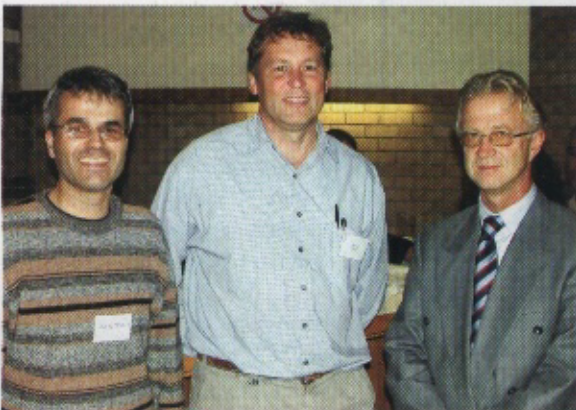
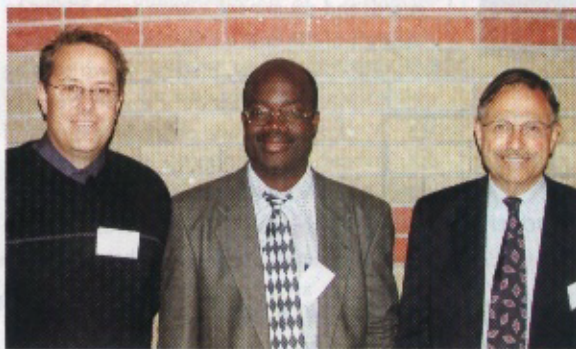
Professor Doug Butterworth of the University of Cape Town provided a very comprehensive insight into the management of the hake fisheries in South Africa and Namibia. Butterworth heads UCT's Marine Resources Assessment and Management group which supplies inputs into the assessment of hake stocks in the two countries.

Butterworth explained the complexities associated with managing two distinct hake stocks (deepwater hake, *Merluccius paradoxus* and shallow water hake *M. capensis*) and highlighted the fact that it is highly likely that the *M. paradoxus* stock is shared to some degree by South Africa and Namibia.

He explained that in South Africa, until 2000, there had been a slow but steady increase in hake stocks. More recently, however, there had been a downturn in stocks and the resource is currently not performing at the anticipated level.

South Africa is in the second year of a three-year programme of phased TAC reduction.

The current Operational Management Plan (OMP) for South African hake has been suspended and a new OMP will be



formulated by 2005. The OMP will be prepared in time for the allocation of long-term fishing rights in 2006.

Butterworth said that the status of the Namibian hake stock is much less certain than the South African stock. Currently, there are conflicting trends in catch per unit effort (CPUE) data (which have shown a decreasing trend) and survey data (which have shown an increasing trend.) As in South Africa, there are difficulties with the availability of reliable data. The lack of fish ageing specialists and a shortage of data on the longline fishery is cause for concern.

Introducing economic considerations

Professors Gordon Munro and Colin Clark of FERU presented their strategy for developing a "bio-economic model" of the hake fisheries in South Africa and Namibia.

They explained that the discipline of bio-economics is an attempt to fuse biology and economics, saying that management models that are based solely on biological parameters may be damaging to the resource.

Their task is to recommend ways of introducing economic considerations into the management of hake resources in South Africa and Namibia. They stressed that it would be very important to take the post harvest (processing) sector into consideration, especially because fish processing is so different for the trawl and longline fisheries.

Impact of longlining

Dr Mike Bergh of fisheries consultancy, OLRAC, presented a perspective on the trawling industry in South Africa. He raised many of the concerns that the trawling industry has about the longline fishery, saying that there has never been a comprehensive analysis of the impact of longlining on the South African hake stock.

One of Bergh's key concerns is that, after 20 years of longlining, catch per unit effort for the longline fishery has never been included in stock assessment models.

He recommended that the BCLME project address some of the key biological and economic uncertainties around longlining. These include investigating the relationship between supply and price (when supplies of line-caught hake are good, the price can drop dramatically) and the question of whether *M. capensis* (so-called white hake) fetches a higher price than *Merluccius paradoxus* (deepwater hake).

As usual, Andrew Kaye of Kaytrad Commodities, presented a strong case for the longline sector. He acknowledged that there are concerns about the hake biomass and the current OMP, and also said that there are uncertainties around the effect that environmental changes have on catches. These changes have been detected across all fisheries over the past few years, he said.

Kaye pointed out that between 1998 and 2000, the full longline TAC was never allocated owing to legal disputes around MCM's allocations. However, since 2002, the fishery has been on a much more stable footing. Between 1998 and 2003, the longline fishery landed 4.4 percent of the hake TAC, far less than the 10 percent that was recommended by the three-year hake longline experiment which was concluded in 1997.

Kaye highlighted some of the concerns that have been raised by the trawling sector, including the concern that the size of longline caught hake is declining, that CPUE is decreasing and that longlining is having an impact on the breeding stock. He presented a summary of factory declarations which appeared to dispute the claim that average sizes have decreased. His statistics showed that there has not been a decrease in the average size of *M. capensis* that is landed by the longline fishery.

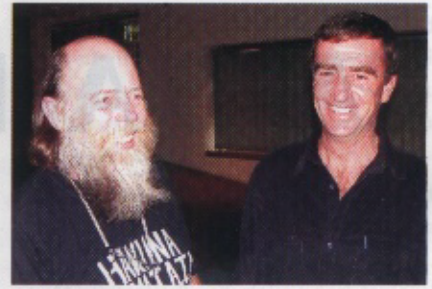
Analysing hake fishery

Dave Japp of Capricorn Fisheries Monitoring provided an overview of the hake fisheries in South Africa. Japp steered the three-year hake longline experiment before leaving MCM to set up a fisheries consultancy. Japp is one of the regional scientists who is assisting the team of researchers from the University of British Columbia with their analysis of the hake fisheries.

Japp acknowledged that there had been a huge increase in the number of stakeholders in the hake fishery over the past 10 years and provided some insight into fishing patterns. He said that there has been an increase in conflict between longline vessels and trawlers on the fishing grounds.

Dr Trevor Hutton and Dr José de Oliveira, both of the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) at Lowestoft in the UK, presented some insights into the process of selecting a model that has the capacity to accommodate biological and economic data.

Professor Rachid Sumaila provided some insight into the economic factors that would be considered by the project. These include



■ Above: Dr Rob Leslie, MCM and Dave Japp, Capricorn Fisheries Monitoring.

■ Below: Dr Moeniba Isaacs and Dr Mafa Hara, both of the Programme for Land and Agrarian Studies at UWC.



price and price elasticity, cost structures, employment dynamics, selectivity of gears, the bycatch of both fleets and the numbers of adult and juvenile fish that are caught by both fleets.

Dr Moeniba Isaacs of PLAAS and Dr Ratana Chuenpagdee of FERU presented some insights into the social aspects of the team's research. There are three types of variables that will be taken into account by the project. These are socio-economic aspects of the fisheries (e.g. jobs and income), socio-cultural variables (e.g. community structure, migration patterns) and socio-political variables (eg governance systems.)

A round table discussion followed the individual presentations. A technical session was utilised to explore some of the intricacies involved in integrating biological, economic and social issues into the management of the hake fisheries in South Africa as well as Namibia.

In the second session of the workshop, participants assisted the researchers by identifying the data that is available and suggesting ways in which it may be collected.

A dedicated website has been established in order to keep stakeholders informed about the progress of the BCLME Project. Visit: www.fisheries.ubc.ca/ru/feru/projects/bclme/index.htm

By Claire Attwood