

## **Commonwealth Fisheries Programme**

### **Indian Ocean Study Tour: Tanzania, Mozambique & Mauritius,**

**2-14<sup>th</sup> November 08**

#### **1. Introduction**

This document reports an intensive study tour designed to gather information and share experience of the sustainable management of marine fish stocks. Covering three African countries bordering the Indian Ocean: Tanzania, Mozambique and Mauritius, two specialists from each country carried out the tour. These worked alongside representatives from the Commonwealth Policy Studies Unit (CPSU) and a nominee of the Commonwealth Human Ecology Council (CHEC). Further research proposals, as recommended by one of the participants, are detailed in the Appendix.

Parallel study tours have been conducted in the South Pacific and the Caribbean. Again, these aim to evaluate approaches to optimising sustainable returns from fisheries while, at the same time, examining the obstacles faced. Results are being fed back to Commonwealth governments, fishing communities and scientists together with suggestions on policy adaptations that may be needed, given the significance of marine fisheries for coastal communities in particular. Tours also have the benefit of building capacity and broader regional awareness among participants while hinting at other capacity-building measures that may be taken in future.

CPSU is co-ordinating these study tours as part of the Commonwealth Fisheries Programme - a two-year programme delivered in conjunction with the Commonwealth Foundation and CHEC. This aims to raise Commonwealth awareness to help stem the decline in stocks, promote sustainable management strategies, and support the long-term viability of traditional coastal fishing communities.

Thanks to funding from the Department for International Development (UK) and AusAid (Australia), the programme conducts case studies, meetings, a publication series, and a report to The Commonwealth Heads of Government Meeting (CHOGM) in November 2009. Programme research and findings will be published online at [www.commonwealthfisheries.org](http://www.commonwealthfisheries.org) and compiled in a book prior to CHOGM.

## 2. Key lessons learnt, by country

### Tanzania

- **Government recognition is essential for small-scale fishers**  
The Tanzanian Government is aware of the importance of small-scale fishers, most of whom are working in freshwater lakes and rivers, particularly Lake Victoria.

The two Tanzanian members of the study tour, Dr. Kassim Kulindwa and Dr. Albogast Kamukuru, are both lecturers at the University of Dar es Salaam. The University participated in the study of sustainability risks to the export of finfish from Mafia Island, Dar es Salaam's major marine fish supplier. This study concluded that stocks were not in danger if fishing was limited to small-scale rather than industrial fishing, and targeted large pelagic stocks rather than demersal coral reef fishes. However, the government fisheries authority is only a department within the Ministry of Livestock and Fisheries Development whereas, in neighbouring Mozambique and Kenya, it is a ministry in its own right. Local fisheries officials within districts are responsible to the Ministry of Regional Administration and Local Government in the Prime Minister's office.

- **The capacity of small-scale fishers needs to be raised**  
Tour members learnt that, due to weak organisation among fishers, middlemen frequently take a disproportionate reward from their catch. In the case of seaweed farmers at Mlingotini village in Bagamoyo District, for instance, it was claimed that the sale price of the seaweed is as little as 1% of the price obtained by Zanzibar businessmen for their product. Stronger fisher associations would make it possible for fishers to deal directly with consumers and retailers over a wider area, use ice and refrigerated transport and offer credit to members etc.
- **Marine protected areas (MPA) are a valuable resource, despite funding problems**  
A field trip to the integrated coastal zone management project at Mwamba Mshingwi in Bagamoyo District, illustrated the advantage of no-take zones. These allow stocks to recover and take a coordinated approach to raising additional income (see below), sanitation and anti HIV/AIDS initiatives. Those concerned were looking to tourism to provide additional income. However, in the meantime, there is a risk that the twice weekly patrolling of the protected Mwamba Mshingwi reefs might end when the final phase of the USAID support concludes.
- **There is potential for additional incomes for coastal communities**  
The tour group visited Mlingotini village in the Bagamoyo District where 47 women and ten men had registered as a seaweed farming collective, harvesting two types of seaweed. This venture, supported by an external NGO, ActionAid, provides important income to the community. The group learnt of other types of revenue, from

beekeeping, milk production, fish farming and various offshoots of tourism, but are also aware of the conservatism in some fishing communities that can limit the uptake of other activities.

- ***International cooperation is key to managing migratory fish***  
The conservation and sustainable management of migratory fish requires international cooperation, especially between neighbouring states. In Tanzania it was suggested that, if the Mnazi Bay Ruvuma Estuary Marine Park (MBREMP) were extended southwards to meet a protected area in Mozambique, it would benefit communities on both sides of the border. On a larger scale, effective cooperation between states in the Southern African Development Community (SADC) could reduce the serious losses from industrial over-fishing and illegal, unregulated and unreported (IUU) fishing. Claimed catches of nearly 15,000 tons by non-Tanzanian fleets in Tanzania's Exclusive Economic Zone (EEZ) are thought to be a huge under-estimate.
- ***Certification is growing in importance***  
Tanzania exports prawns, lobsters, squid, octopus and crabs (there are crab fattening strategies) from its territorial marine waters. Dr Benjamin Ngatunga, Director of Research at Tanzanian Fisheries Research Institute (TAFARI), told the study group that he expects octopus to be the first export to receive a sustainability certificate from the Marine Stewardship Council. This will be important for premium exports to the European Union. It is Tanzanian policy to seek certification for other species.
- ***Specific measures for monitoring, control and management are necessary***  
The study tour found that the government has banned the export of sea cucumber, seahorse fish, pipefish and shark fins which, when dried, are prized in China and other Far East countries. A steep decline in prawn stocks has also led vessel owners to cease industrial fishing for prawns.

Alphakrust Ltd, a group company of Alpha Group, is implementing a commercial prawn farming project in Mafia to cope with uncertainties of wild prawn stocks. The project aims to produce 1,600 tons of shrimp annually over two crops. Further, the Tanzanian army has at times been deployed to stop the dynamiting of reefs and illegal seine fishing. This has proved unpopular and provided only short-term benefits.

#### *Mozambique*

- ***Government agencies provide valuable support for small-scale fishers***  
The two Mozambican members of the study tour, Mr. Horacio Gervasio and Mr. Julio Zetha, are both senior members of a government-backed institute responsible for assisting and promoting the interests of small-scale fishers – the Instituto Nacional de Desenvolvimento de Pesca de

Pequena Escala (IDPPE)<sup>1</sup>. This carries out research, offers advice to fishers and fishing associations, and promotes the interests of some 140,000 small-scale fishers working on the coast and inland waters.

The government divides Mozambican fishing into three categories:

- Industrial (covered by quotas)
- Semi-industrial (the owner has a medium-sized motorised fishing boat)
- Small-scale (the fisher occasionally uses a small motorised fishing boat)

The study group was impressed by the value of a specialist agency like IDPPE, which was concerned not only with fishing, but the broader health of coastal communities.

- ***Sympathetic, low-cost, low-tech support for artisanal fishers is crucial***

Following the logic of IDPPE, the agency sought to relate to the culture and poverty of coastal communities. Hence it has not tried to ban seine net fishing at a stroke, despite considering them destructive. Instead, it is gradually promoting gill nets. Small, inexpensive developments are also promoted. For instance, IDPPE has pioneered the use of lifejackets made from six empty plastic bottles per person, tied together, and lead from used car batteries as weights for gill nets sinkers.

- ***Comprehensive co-management strategies are growing in significance***

Due to distance and time limitations, the study group was unable to visit Sofala Banks, a key marine fishing district where there have been conflicts between industrial, semi-industrial and artisanal fishers. However, they saw a hydro dam lake at Corumana, south of Maputo. Here, there is a combined co-management committee, which brings together fishing, tourism and government as well as water and hydroelectric interests. This combined approach is also taken on the coast, though the group was unable to assess how well it resolves conflicts between the different interests. The potential for conflict was illustrated at Corumana where tourist companies are introducing motorised speed boats, crocodiles and hippopotami. Crocodiles threaten fish stocks by eating them; hippopotami threaten lives of fishers by overturning their small paddled boats; and speed boats pollute the water through their emissions.

- ***Fish is an invaluable source of protein***

A key lesson from Mozambique is the significance the country attaches to fish as a protein food source. It is estimated that 40 per cent of the animal protein consumed by the population comes from fish.

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<sup>1</sup> Translates into the National Institute for the Development of Small-Scale Fishing

- ***It is difficult to monitor the EEZ for IUU fishing***  
The government believes that it is currently losing around US\$ 200 million a year in IUU fishing, mostly of tuna. Around 200 foreign fishing vessels are involved in tuna fishing in the 500,000 square miles of EEZ and these are difficult to monitor. The Norwegian government donated a patrol vessel in February 2008, and Mozambique has sought to follow up the recent SADC Ministerial meeting in Windhoek with a radar-based Vessel Monitoring System (VMS).
- ***There are growing measures for monitoring, control and management***  
Concern over the depletion of Mozambique's valuable prawn fishery has meant no new licences have been awarded since 2001, and there is a closed season. Vice-Minister Victor Borges told the group that the government is now encouraging prawn aquaculture to reduce the pressure on marine prawns. Small-scale fishers have a monopoly over the three nautical mile zone in the inshore waters.

#### *Mauritius*

- ***Organisation offers advantages for small-scale fishers***  
Mauritian artisanal fishers are, in general, well organised and, though not wealthy by Mauritian standards, appear better off than similar fishers on the African coastline. There are relatively few - 2,078 fishers were involved in artisanal fishing in 2007 - but these are unionised and meet the Minister monthly. They get a bad weather allowance from the government when they cannot fish and have subsidised credit to buy boats, which can go further offshore. Most (85%) have engines for their boats. Moreover, the government freely provides fish aggregation devices (FADs) for small-scale fishers to obtain live bait for the tuna fishery. Nonetheless they too face problems with middle men taking a large share of their profits in a society which does not have a fish-eating tradition and where the best markets are in tourist hotels.
- ***There is a disconnect between small-scale and industrial fishing***  
As elsewhere, the income obtained by the government from tuna licences is not ploughed into support for the small-scale or subsistence fishery. Further, the two large tuna processing factories in Port Louis, Mauritius do not take tuna from subsistence fishers. This is because their tuna are not guaranteed to meet exacting international hygiene standards.
- ***Conflict exists between small-scale fishing and tourism***  
Although some small-scale fishers take tourists sport fishing, the increase in tourism has created conflicts in the lagoon surrounding Mauritius. This area is not large and sailing and power boating can severely affect fishers by damaging their traps and lines. Fishers are also concerned that aquaculture pens may damage stocks of wild fish. The Prime Minister declared in 2008 that he wishes to double the annual visitor total to 2 million, in an island with 1.2 million permanent residents.

- International cooperation needs to improve to defeat IUU fishing***  
 The Mauritian EEZ covers 1.9 million km<sup>2</sup> and there is only one plane to carry out inspections, around three times a week. Some IUU vessels switch off their transponders to baffle the VMS system, which was introduced following Mauritian legislation in 2005. However the Director of Fisheries claimed in Rome in March 2009 that there had been no illegal fishing in the EEZ in the last two years. International cooperation between relevant actors - SADC, the EU and the five francophone states of Mauritius, Reunion, Comoros, Madagascar and Seychelles - is inadequate. There are different interests and agendas at stake, and effective control requires investment.
- There are risks of depletion in the tuna fishery***  
 During a visit to one of the two big tuna processing factories, *Thon des Mascareignes*, the study group heard from the Chief Executive, Patrice Robert, that he did not think tuna stocks are at risk. However, at a roundtable with the study group, Dr Evert Liewes, Managing Director of Princes Tuna factory, complained that the Indian Ocean Tuna Commission is not giving the private sector enough information. The group suspects that tuna stocks, which can swim from Indonesia to the African coastline, are seriously at risk. It is significant that artisanal catches have been falling steadily from 1,000 tons in 2006; to 600 tons in 2007; to an estimated 400 tons in 2008.
- There are limited measures for monitoring, control and management***  
 There are certain management measures in place; for example there is a limit on the use of gill nets, which are only permitted from October to April. Similarly small-scale fishers have a monopoly in the lagoon and inside the 12 nautical mile limit, although foreign vessels have sometimes been found inside.

### 3. Significant or innovative approaches

In global terms it would probably be an exaggeration to say that any approach learnt by the study team, in its brief time in these three countries, is truly innovative. But here is a short commentary on a few key developments of interest.

- ***International cooperation and awareness is improving***  
The study tour took place less than six months after the SADC Ministerial on IUU fishing in Windhoek. The group recognised a new awareness in SADC states of the importance of combating the theft of their fishery revenues. It is estimated that African states are losing \$1000M a year from IUU fishing. The group was less sure that this awareness extends to sustainability issues, and significant challenges remain.
- ***There is increasing governmental recognition of the significance of small-scale and subsistence fishing***  
In Tanzania and Mozambique especially, it was clear that governments recognise the value of small-scale fishing for employment, food, and the social wellbeing of coastal communities. Simple boats not requiring motors are not subject to the vagaries of fuel prices. This policy recognition is not always followed through, but can be built on for the future.
- ***There is one designated institution supporting artisanal fishing***  
The group was highly impressed by the work of IDPPE, as a government backed institution focused on developing the incomes and wellbeing of small-scale fishers, as well as promoting the interests of their villages. Founded in 1985, after Mozambique's adoption of a structural adjustment programme, the IDPPE is backed by a credit-giving body to fishers, the FFP (Fundo de Fomento Pesqueiro). There were no comparable institutions in the other two countries visited, nor in many others in the Commonwealth.
- ***Effective fisher organisations make a difference***  
The group was impressed with the effectiveness of the union of Mauritian fishers. Associations of fishers are often small and weak, dependent on a handful of individuals and unable to develop the interests of members. Clifford LeMarcq, a Mauritian fisherman and member of the study group, is keen to bring innovations to his Black River fishing association, which is affiliated to the union. It is clear that improved organisation is vital if artisanal fishing is to flourish.
- ***Marine Protected Areas are being considered in conjunction with co-management of coastal waters***  
One Marine Protected Area in Bagamoyo, Tanzania was visited. The group was informed of three other MPAs in mainland Tanzania, four MPAs in Zanzibar, and two MPAs in Mozambique. The World Summit on Sustainable Development in Johannesburg, 2003, called for 12 per

cent of the world's coastline to be designated as MPAs. These do not require a total ban on fishing, only that fishing is sustainable. This may require a preliminary assessment of stocks. The Bagamoyo zone has other, more comprehensive objectives. The MPA approach should be considered in conjunction with co-management strategies, as is now being pursued in Mozambique.

- ***Additional sources of income exist for fishing communities***  
The group saw that, as elsewhere, the Indian Ocean states are encouraging the growth of additional income for coastal communities. Members met seaweed farmers in Bagamoyo and talked to the leader of a women's group at Corumana, Mozambique, which is looking to establish a poultry project for producing eggs. They also learnt of efforts to incorporate fishers into the growing tourism market, particularly for ecotourism, diving and reef visits.
- ***Markets and consumers are having a marked impact on the evolution of fisheries***  
The impact of European consumers is rather different from that of African consumers, but both are playing significant parts in the evolution of Indian Ocean fisheries. Tanzania is getting octopus exports to Europe certified as from sustainable sources. Mauritian tuna processors are worried that environmental campaigners in Europe may challenge their products. African customers, further from the coast, are providing a market for marine fish products where freezing and transport permit, thus increasing fishers' earnings.

#### **4. Challenges these approaches now face**

- ***International effort and investment is inadequate***  
Although it is obvious that migratory fish are a resource that should be managed through international agreement and cooperation, the international effort and investment provided is still inadequate. For all three states visited in this study tour, oceanic EEZ areas are large, IUU monitoring is costly, and the vessels carrying out most of the fishing do not fly their flags.

In Mauritius in 2007, for example, 236 vessels were fishing in the EEZ. Only 33 of these were local Mauritian ships; the largest number (86) were from Taiwan, and 59 from the European Union. While both Mozambique and Mauritius have VMS systems, the Albion Research Institute in Mauritius told the group that there is no VMS cooperation as yet across SADC waters as a whole. Furthermore, international cooperation at a neighbourly level could be increased. The group heard that Tanzanian boats do much of the fishing in Cabo Delgado, in northern Mozambique. Much effort is currently devoted to reducing the loss of government revenue from IUU fishing. Related issues around the sustainability of stocks – particularly of prized tuna varieties such as albacore, yellowfin, bigeye and skipjack – do not yet seem to be attracting sufficient concern. Yet the total tuna quota for Mozambique

was caught in just half of the year. In the prawn fisheries, for example, the group was told that bycatch could account for 70 per cent of the take. Anecdotal evidence along the African coastline suggested a steady reduction in most marine fish stocks.

- ***Governments must reassess the value of marine fish***  
Recognition of the importance of marine fish, for the diet and the economy, could be taken much further. In Tanzania, for instance, there has not been a stock assessment study since 1993, though an acoustic survey is planned for 2009. Comprehensive studies of the significance of small-scale fishing in all three countries could underpin policies to prevent stock depletion and revalue the contribution of the small-scale sector. There is also a case for reviewing the institutional mechanisms in government. In Mauritius, for example, a Fisheries Ministry was recently swallowed up in a Ministry of Agroindustry, Food Security and Technology. Also to be overcome is the disconnect between industrial fishing, carried out by non-SADC boats which pay annual rentals to governments of up to US\$ 30,000, and the small-scale inshore fishing, where an artisanal fisher in Mauritius can earn US\$ 400 a day from tuna caught on long lines in a season running from October to April. Rentals from international vessels are attractive to Finance Ministries, and have been seen as separate from an underfinanced small-scale sector, which could do more with investment. There is a mindset here to be overcome.
- ***Designated instruments are required***  
Why are there few agencies comparable to the IDPPE in other countries? The answer is not obvious, because fishing communities elect Members of Parliament and therefore have voices to represent them. Many families benefit from and depend on the catch of artisanal fishers. In a short study tour it would be facile to reach firm conclusions, but there would seem to be two likely explanations. The first is that governments and populations at large are still insufficiently aware of the significance of small-scale and subsistence fishing to communities and the wider economy. The second is that fishers themselves often suffer from poor education and social status, and are not sufficiently organised to make their cases (see below).
- ***Stronger fishers' organisations are crucial***  
The weakness of fishers' organisations derives partly from cultural factors, partly from the dispersal of fishers who are often in small villages along the coastline, and partly from competition among fishers themselves. The result, as seen by the study group, was that fishing associations are frequently small in membership, and lacking in institutional staying power. The exception, noted in Mauritius, pointed to more usual difficulties elsewhere. Whether there are NGOs, churches or trade union federations willing to organise small-scale fishers is a moot point. Socio-cultural and status questions may also be hard to overcome. In Mauritius, for instance, some fishing populations

come from an ethnic minority group which perceives itself as struggling against historic disadvantage.

- ***Marine Protected Areas need establishing and maintaining***  
This is not as easy as some think. It requires substantial consultation, so that coastal populations see the benefit of restricting the catch in some areas to allow catchable stocks to rise in others. It requires monitoring and surveillance, because the no-catch zones may become richer in marine life, and tempting to poachers. But maintaining this surveillance can be expensive. In Bagamoyo the study group saw protected reefs of 4km<sup>2</sup>, marked by buoys, which are patrolled twice a week, including at night. The funding to pay for this patrol will run out in 2010-11. The challenge that MPAs have to overcome is not only maintaining the support of local people, but also providing sustainable finance for their management. While tourism income may help some MPAs, it may not be available in areas that are less attractive or accessible to tourists. Co-management strategies face the challenge of satisfying different interests, which may not be easy to reconcile. In Bagamoyo, for example, the group was told that the local district was keen to introduce a bylaw for a tourist tax. Bagamoyo anticipates World Heritage Site status shortly. Yet the local authority argues that it gets no direct benefit from increasing tourism. This is while suffering an increase in duties and costs, and denying fishers access to the ocean. In Mauritius the group learnt of conflicts between fishers, tourism firms and boats. Co-management will always face practical problems.
- ***Additional income streams are required***  
The logic for introducing extra income into coastal communities, over and above fishing, is unarguable. This is particularly true for women's income, since fishing remains predominantly a male occupation. But whereas a fisher can take divers or snorkelers to a reef on days when they do not want to go fishing, and some men or women will find jobs in tourist hotels, tourism itself is not a magic solution to the employment needs of coastal communities. Some of the problems to be overcome include:
  - The need for investment in non-fishing activities or industries
  - The reluctance of fishers, who may not see it as a full-time activity, to undertake different work
  - Population pressure, especially where more are moving to the coast

Bureaucracies may not always be helpful, especially where groups other than fishing communities are recognised as having needs. At Corumana, for instance, a Mozambican women's association complained that the local authorities were being slow to respond to a funding request for their poultry project. Substantial funds have been devolved from central to local government in a new Mozambican national policy, but the women argued that these were not being passed on fast enough. Where there are discrete instruments to promote additional income – such as the Tanzania Coastal

Management Partnership or the IDPPE – problems relating to additional income may be overcome. But for developing countries, faced with competing priorities, this may not be seen as an overriding priority.

- ***A well informed market can play a key role***

The market, both in developed and developing countries can respond and is responding to questions of sustainability. But consumer knowledge is swayed by NGO campaigns and retailers' public relations, so is often erratic and dated. It is difficult for consumers to deal with complexity, for example, comparing the ecological disadvantage of prawn culture in South Asia, which may be replacing mangroves, with captured marine prawn in the Mozambique channel, where bycatch can amount to 70 per cent of the take. Carbon footprints, and emissions by air or shipping freight, are complicating the equation. Simple stories, accurate or not, affect purchases in Europe, whereas availability and price remain paramount in most developing countries. Reliable information on stocks and depletion is not yet available on an annual basis to consumers in most African states and the countries to which Africa exports fish. When it is, purchasers will be able to make more educated decisions.

## **5. Recommended strategies and future actions for the countries of the study tour**

- *Tanzania*

It is recommended that the government consider the following actions:

- Establish a specific Fisheries Ministry
- Commission an annual assessment of marine fish stocks within its EEZ and territorial sea
- Provide an economic assessment of the value of small-scale fishing – employment, catch value, food and protein significance
- Follow up this assessment with an investment strategy for the coastal belt, taking account of the work by the Tanzanian Coastal Management Partnership and others
- Accelerate anti-IUU strategy with international cooperation, if necessary with international donor support

It is also recommended that academic, private sector and non-governmental experts in marine and related issues should pool their knowledge in a network, which will focus on depletion issues, the sustainability of marine fish stocks, and the long-term viability of coastal communities.

It is recommended that Tanzanian union and cooperative bodies launch an initiative to strengthen the organisation of small-scale fishers, with the aim of building capacity to represent their interests on the national stage, market their fish for a better price, and improve their standard of living.

- *Mozambique*

It is recommended that the government consider the following actions:

- Commission annual assessments of marine fish stocks within its EEZ and territorial sea
- Build on the work of the IDPPE in assessing the value of small-scale marine fishing, and act to protect the celebrated prawn fishery in particular
- Maintain a comprehensive investment strategy for the coastal belt, including both small-scale fishing and additional incomes for the fishing communities, if necessary with donor support
- Accelerate anti-IUU strategy with international cooperation, if necessary with international donor support.

It is also recommended that academic, private sector and non-governmental experts in marine and related issues, with IDPPE, should pool their knowledge in a network, which focuses on depletion issues, the sustainability of marine fish stocks, and the long-term viability of coastal communities.

It is recommended that Mozambican union and cooperative bodies launch an initiative to strengthen the organisation of small-scale fishers, with the aim of building capacity to represent their interests on the national stage, market their fish for a better price, and improve their standard of living.

- *Mauritius*

It is recommended that the government consider the following actions:

- Re-establish a specific Fisheries Ministry
- Commission annual assessments of marine fish stocks within its EEZ and territorial sea
- Provide an economic assessment of the value of small-scale fishing – employment, catch value, food and protein significance;
- Conduct an inquiry into the relationship between fishers, tourism and other interests in the lagoon, and into pollution risks to marine life
- Accelerate anti-IUU strategy with international cooperation, if necessary with international donor support.

It is also recommended that academic, private sector and non-governmental experts in marine and related issues, should pool their knowledge in a network, which focuses on depletion issues, the sustainability of marine fish stocks, and the long-term viability of coastal communities.

- *For the SADC and Indian Ocean region*

It is recommended that SADC and its Indian Ocean members, review their progress on IUU a year after the Windhoek Ministerial of 2008, and encourage closer cooperation between neighbouring states to prevent the depletion and theft of marine fish stocks. It is recommended that SADC encourage all coastal member states to assess the value and promote the interests of small-scale and inshore fishers.

- *For the Commonwealth*

It is recommended to Commonwealth Heads of Government that:

- There is a call for enhanced international cooperation to prevent the theft and depletion of marine fish stocks
- The Commonwealth Secretariat and Commonwealth Foundation organise a Commonwealth conference in conjunction with FAO to examine practical policies, and the scope for a new international instrument, which would stem the depletion of commercial deep sea stocks such as tuna, as well as inshore and reef fish and crustaceans on which coastal communities depend for their food and livelihood
- Commonwealth agencies promote an annual survey of the state of the world's marine fisheries, given the special Commonwealth concern and expertise
- Commonwealth agencies promote a network of academic, private sector and non-governmental experts to supplement the work of governments in combating depletion of fish stocks, promoting sustainability strategies, and the long-term viability of coastal communities
- Commonwealth member states, as a matter of urgency, assess the economic value of small-scale fishing for employment, catch value, food and protein, and community viability
- Commonwealth Fund for Technical Cooperation provides for capacity-building for small-scale fishers in the areas of organisation, marketing, and low-cost refrigeration and transport
- Commonwealth agencies examine the experience of MPAs and recommend how they can achieve long-term financial and managerial viability
- The work and impact of the Commonwealth Fisheries Programme be assessed after the Commonwealth Heads' Meeting in Trinidad and Tobago in November 2009 with a view to carrying forward the decisions of Heads and utilising the extensive findings from the Programme.

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The Commonwealth Fisheries Programme is being conducted over two  
years  
to provide civil society perspectives on the challenges facing marine fish  
stocks, and the livelihoods of coastal communities. Views and opinions  
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DfID and AusAID.

## Annexe 1

### **Reflections by Andrew Baio, Commonwealth Human Ecology Council and Portsmouth University, on scope for research projects**

- ❖ 1. *The Issue of Fisheries Policy Coherence*: Policy incoherence was apparent in the countries visited and there is evidence at the international level (e.g. OECD) that fisheries incoherence is a major threat to sustainable fisheries stewardship. For example, in Tanzania there is overlapping of responsibilities between District Authorities and Mafia Island Marine Park (MIMP); in Mozambique, Regional Water Bodies administer fresh water bodies as in Corumana. But the 2003 LOLE laws (i.e. decentralisation laws) also empower local authorities with a role in inland fisheries management creating a conflict situation. Article 538 of the Civic Code and the Fisheries Management Act 2007 may have to be reconciled in Mauritius. In Sierra Leone, the Local Government Act and the Fisheries Management and Development Decree of 1994 send conflicting signals. Policy incoherence seems to permeate other fisheries in the developing world. A project on Reviewing Fisheries Policies of Commonwealth Countries, with the object of ensuring policy coherence, would be a worthwhile area for policy work (more so with CPSU as a member of the consortium).
  
- ❖ 2. *Free Access, Social Safety Net and the Tragedy of the Commons*: Artisanal fisheries are very important in the developing world. They are freely accessed and provide a safety net in countries with widespread unemployment. Coastal communities often come to rely on this source of livelihood (in some cases it may be the only way of eking out a living). But the arrangements for access can lead to: hurriedly taking the resources before someone else does; a lack of incentive to invest in improving productivity; and a targeting of the most valuable resources. Under such conditions, resources tend to be overexploited and the source of livelihood is lost. This is what Garret Hardin has described as a “tragedy” emanating from the sad imperatives of a common resource pool. Instead, the goal in renewable resource stewardship should be to *sustain the resource health* and at the same time to *ensure livelihood security*. Unfortunately neither of these is achieved under free access. Most of the approaches used to deal with the problems e.g. Marine Protected Areas; Rights Based Fisheries etc. involve the subtraction of some actors from access to fishing. The reality is that this will not work if the subtracted actors are not gainfully engaged elsewhere. Alternative livelihoods should allow the fishers an income if they are prevented from fishing. But over the years only lip service has been paid to the promotion of alternative livelihoods. A project should be undertaken to diversify the livelihoods of fishing communities. This would profile livelihoods, and investigate the viability of potential alternatives.

- ❖ 3. *IUU Fishing and Multinational Fish Processing Facilities*: IUU fishing is an important menace to global fisheries, and more so in developing countries like the ones we visited on the study tour. For the Indian Ocean axis there have been calls for a coordinated approach. There are several regional bodies, including: the Indian Ocean Commission; the Indian Ocean Tuna Commission; the South West Indian Ocean Fisheries Commission; and the Southern African Development Community. However, observations from the tour call for a careful contextualisation of the problem in terms of the impact of multinational fish processing facilities on IUU fishing. From the admission of the CEO of *Thon Des Mascareignes Fish Processing Factory* in Mauritius for example; the origin of catch (that is to say, where in the ocean the fish was caught) could not be ascertained. Given that price incentives for tuna species of € 1025/ton Skip Jack; € 1070/ton Yellow fin and € 2000/ton Albacore are offered to secure supplies, I submit that the combination of good prices and lack of firm evidence on origins could be an incentive for IUU fishing. Where there is competition for supplies, weak states that cannot monitor their EEZ properly are vulnerable. This may explain why a whopping 72 vessels were detected in Tanzanian waters. What underpins these fears is, for example, the fact that Tanzania claims about 50% of Lake Victoria, but Kenya with 15% of the lake exports more Nile Perch. This is simply because Kenya has invested in processing facilities and catches from Tanzanian waters are sold to Kenyan plants. I would argue that there is scope for an investigative project on the Impact of Processing Plants on IUU Fishing in the Indian Ocean, and how this could be factored into curbs on IUU fishing in the region.
  
- ❖ 4. *Stock Collapse*: The prawn fisheries of Tanzania and Mozambique are in a terrible state. This fishery has actually collapsed in Tanzania. This is a practical realisation of what has largely been theoretical for such fisheries. That the companies could voluntarily opt-out of the fisheries indicates zero or negative profits and stock levels at the *Free Access Bio-economic Equilibrium* which gives zero profit are extremely low. Extended closures at the Sofala Bank prawn fisheries, in Mozambique, is another case of overexploitation. The study tour should not only learn from innovative practices but from disastrous ones also, if only to help other countries from not going down the same road. I would argue that another topic for research is: *A Bio-economic Analysis of the Collapse of Indian Ocean Prawn Fisheries*. This inquiry would detail the capture mechanism, and the investment/management regimes. It would aim to identify how and why these fisheries collapse. For example, prawns are *Anadromous* in that they spawn in fresh water and grow to maturity in marine waters. Should fishing intensity be increased during spawning migrations, cost would be reduced and catch increased but stock collapse could be the consequence. Such an analysis could provide insights which other countries could learn from.
  
- ❖ 5. *Vulnerability of Fisheries*: Fisheries are vulnerable to biophysical, social or economic factors, or to a combination of all at any point in

time. Vulnerability is a forward looking approach to risk assessment. It moves toward an *ex-ante* approach, which aims to undertake or facilitate risk management before the risks actually happen. Climate change is an important vulnerability condition which was reported during the tour (as tuna stocks were said to be unavailable due to hydrological changes). A study on the vulnerability of fisheries, profiling vulnerability conditions and measuring the parameters for the exposure, sensitivity and adaptability to these conditions, would make a worthwhile project.

- ❖ 6. *The Case for Cost – Benefit Analysis*: In African fisheries (especially industrial fisheries) only catch quantities and revenue information are of concern. This makes it difficult in practice to establish the contribution of the fisheries sector to societal wellbeing. Fish have not yet jumped out of the water and materialised on a dining table well dressed and ready for munching. At whatever level, investments involving capital assets that could have been used in other productive sectors of the economy are expended to take fish catches. This should be justified by showing that *marginal cost of investment* (MC) is less than *marginal returns* (MR). Investment should be queried when the two variables are equal as there is no profit at this level of production. In fisheries, equating production to such level (MC = MR) is even more conservative and represents a more precautionary approach than biological reference point. Developing countries have lagged behind in incorporating the economic reference point in stewardship because almost all post-independence personnel in Africa working directly in fisheries were trained in Fisheries Biology and lack the grounding in the Economics of Fisheries Management. There is scope for a project on: Capacity Building for the Incorporation of an Economic Reference Point in Fisheries Management.
- ❖ 7. *Political Economy of Fisheries*: This involves analysis of the issues of how a country's policies, institutions and practices influenced the economic system and its features in relation to the impact on fisheries. Some key issues in developing countries include the arrangement with and impact of Distant Water Fleets (DWFs); operations involved in Monitoring, Control and Surveillance (MCS) and the Political Economy of Artisanal Fisheries Development Programmes (AFDEPs). Such analysis would provide insights into for example, why Mozambique has a fishing harbour but transshipment is still done at sea or what was the motivation behind the Tanzania government's interest to invest in Finfish exploitation etc. An investigation in the "Political Economy of Fisheries of Developing Countries" could examine actions taken over time; in which policy and institutional context; which mechanisms were at work (political or economic practices) that led to the outcome (the current status quo) – suggesting how we got to the state of affairs and how bad practices could be avoided.

### **Some Other Issues**

- ❖ 1. *European Union and Developing Countries*: The relationship has been ironic in that the EU is one of the biggest donors of development funds to these countries but yet has been found wanting in dealings with these countries on fisheries matters. Any future arrangement with the EU as argued elsewhere requires an arbiter – a role the Commonwealth Fisheries Programme (CFP), or its successor, may perform. However, there is quite a high probability that these countries could be disenchanted if this role is not seen to be fairly performed.
  
- ❖ 2. *Environmental Resource Management Specialist*: For a research programme to be well thought-out and directed, the Commonwealth agencies ( Secretariat or Foundation ) will need a specialist in environmental resource stewardship who can liaise with the members of the Commonwealth Fisheries Programme consortium, governments and other agencies.

## **Annexe 2**

### ***Biographies of participants***

**Andrew Baio** is a PhD candidate at Portsmouth University at the Centre for Economics and Management of Aquatic Resources (CAMER), his research area is 'Poverty, Vulnerability and livelihoods in Coastal Resource Management'. He has been nominated to join the study tour by the Commonwealth Human Ecology Council.

**Vassen Kauppaymuthoo** is a qualified Oceanographer, registered Professional Environmental Engineer, Professional Diver, Qualified Skipper and Registered Trainer in Mauritius. He has been involved in innovative fisheries management as well as the fight against IUU at the regional and international levels. He is also president of an organisation called Kalipso which works very closely with coastal communities.

**Clifford LeMarque** is a fisher and a member of the Black River fishing Association in Mauritius.

**Dr. Kassim Kulindwa** is a researcher in Natural resource and environmental economics and currently holds the post of Associate Dean, Research at the Faculty of Arts and Social Sciences, University of Dar es Salaam, Tanzania. His main areas of research are sustainable fisheries (harvesting, processing, trading and benefit sharing) looking at ways to improve small scale fisheries for the fishing communities and marketing chain analysis.

**Dr. Albogast Kamukuru** is a marine biologist and teaches at the university of Dar-es Salaam.

**Julio Zitha** works for the Institute for the Development of Small Scale Fisheries (IDPPE).

**Horacio Gervasio** works for the Institute for the Development of Small Scale Fisheries (IDPPE).

**Richard Bourne**, study tour leader, was first Head of the Commonwealth Policy Studies Unit, 1999-2005 and has been involved in a succession of Commonwealth activities since 1982, when he was Deputy Director of the former Commonwealth Institute, Kensington; he was first Director of the Commonwealth Human Rights Initiative, 1990-2 and Director of the Commonwealth Non-Governmental Office for South Africa and Mozambique ( 1995-7 ).

**Homera Cheema** is projects co-ordinator at the Commonwealth Policy Studies Unit and is the study tour co-ordinator for the Commonwealth Fisheries Programme

### **Annexe 3**

#### **Schedule**

<b>Country</b>	<b>Date</b>	<b>Day</b>	<b>Programme item</b>	<b>People met with</b>
Tanzania	3/11/08	1	Introductory session convened by CPSU with presentation from TAFIRI (Dr. Ngatunga) and with workshops discussing the aims and objectives of the study tour	Dr. Ben Ngatunga from Tanzania Fisheries Research Institute (TAFIRI)
Tanzania	3/11/08	1	Visit to fish market in Dar-es-Salaam	Guided by Dr. Kamukuru
Tanzania	4/11/08	2	Briefing at the secretariat of Tanzania Coastal Management Partnership (TCMP) held in Dar-es-Salaam	Director of TCMP Mr. Jeramie Daffa
Tanzania	4/11/08	2	Field trip to Bagamoyo visiting local officials and guided by Mr. Abu Bakr including a boat trip to the local Marine Protected Area.	Mr. Abu Bakr (District Integrated Management facilitator of TCMP in Bagamoyo district)
Tanzania	4/11/08	2	Visit to Mlingotini village to see ActionAid sponsored seaweed farming	Mr. Abu Bakr (District Integrated Management facilitator of TCMP in Bagamoyo district)
Tanzania	5/11/08	3	Conference session convened by CPSU looking at the academic research in fisheries management. Presentations given by both Tanzanian participants Dr. Albogast Kamukuru and Dr. Kassim Kulindwa as well as a workshop which finished with an	Dr. Albogast Kamukuru and Dr. Kassim Kulindwa

			evaluation of the best-practice and management issues seen in Tanzania.	
Mozambique	7/11/08	1	Morning visit to fish market in Maputo as well as local fishermen; discussion with chairman of fishing association and visit to Costa del Sol looking at fishing methods and techniques	Led by Study Tour participants Horacio Gervasio and Julio Zitha.
Mozambique	7/11/08	1	Short visit to the IDPPE headquarters followed by briefing at Ministry of Fisheries	
Mozambique	7/11/08	1	Overview of activities of Ministry of Fisheries followed by Question and Answer session	Chief of the department of Fisheries Management, Claudia Thomaz.
Mozambique	7/11/08	1	Presentation given by Vice-Minister of Fisheries, Deputy Director of IDPPE and Head of international co-operation, Angelica Demo followed by Question and Answer session	Vice Minister, Victor Borges. Maria Ascensao Pinto, Deputy Director of IDPPE. Head of international co-operation, Angelica Demo.
Mozambique	8/11/08	2	Field Trip visit to Coramana dam to see inland fisheries and meet local fishing associations.	Led by Horacio Gervasio
Mozambique	9/11/08	3	Evaluation session with participants of the study tour	Richard Bourne
Mauritius	11/11/08	1	Stakeholder conference convened by Vassen Kauppamuthoo and CPSU at the Paradis Hotel followed by Question and Answer session	Attended and contributed by: -Managing Director, Luis ? of 'Princes' Tuna Company -Representatives from the fisheries division

				<ul style="list-style-type: none"> <li>-civil society fishing organisations</li> <li>- representatives from Mauritius Oceanography Institute,</li> <li>-Fisherman Investment Trust</li> <li>-Director of National Coast Guard of Mauritius</li> </ul>
Mauritius	12/11/08	2	Field trip to Black River and looking at practical fisheries management issues near the reef and outside the lagoon. Spending a whole day on a fisherman's vessel, looking at fishing techniques	Clifford LeMarque and Vassen Kauppymuthoo (study tour participants)
Mauritius	13/11/08	3	Visit to Albion Research Institute looking at Vessel Monitoring Systems	Albion Research Institute- Divisional Scientific Officer
Mauritius	13/11/08	3	Visit to tuna processing plant Thon de Mascareignes' presentation given by managing director followed by Question and Answer session. Guided tour of the tuna plant looking at refrigeration and processing of tuna	Patrice, Robert, Managing Director of 'Thon de Mascareignes' tuna processing plant..
Mauritius	13/11/08	3	Evaluation of Mauritian leg of the tour followed by evaluation of whole study tour	Richard Bourne