

Sharing the Fish '06

Allocation issues in fisheries management

27 February–2 March 2006
Fremantle, Western Australia



Cover photographs:

Background: Beach landing at Dar es Salaam, United Republic of Tanzania.

Inset: A fish market scene in Dar es Salaam, United Republic of Tanzania.

Courtesy of R.J. Clark.

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Preparation of this document

The “Sharing the Fish ’06: allocation issues in fisheries management” conference was organized to address the fundamental, and essential, question of “When fisheries are under fishing pressure, who gets what?” It was also an obvious next step after the FishRights99: Use of property rights in fisheries management conference that was also held in Fremantle, Western Australia, and similarly hosted by the Department of Fisheries of the Government of Western Australia in cooperation with the Food and Agriculture Organization of the United Nations (FAO) six years prior. As previously, over 345 delegates attended.

These proceedings provide the main papers and presentations from Sharing the Fish ’06 Conference, which identify and show how the fisheries sector has tried to grapple with some of the many issues that are associated with:

- allocations across jurisdictions (including governmental, regional and multilateral issues);
- allocations within sectors; and
- allocations between sectors.

This document has been prepared by a team consisting of Ms Dana Isokawa, Ms Yuanbo Liu, Dr Fred Wells and Dr Rebecca Metzner. The attached CD-ROM contains the complete version of all contributions presented during the conference.

The sponsorship received from governments, organizations and companies who permitted their staff to provide time and effort in support of the various Sharing the Fish ’06 Conference Organizing and Steering Committees was, and still is, most greatly appreciated. Finally, the conference would not have been able to proceed without the financial support of its sponsors, and that support is greatly appreciated.

Abstract

These proceedings contain the main papers and presentations from “Sharing the Fish ’06: Allocation issues in fisheries management” conference that was held in Fremantle, Western Australia, 27 February to 2 March 2006. They include the substantial work of the keynote and invited speakers covering the three themes of the conference which addressed the critical fisheries management topics of: (i) allocations across jurisdictions (including governmental, regional and multilateral, and national allocation issues); (ii) allocations within sectors (including extractive and non-extractive allocations issues; management issues; and, commercial, artisanal and tourism allocations issues); and (iii) allocations between sectors (including customary/indigenous, recreational, commercial, and artisanal/subsistence allocation issues). The enclosed CD-ROM contains the papers from the concurrent sessions which delved further into each of these allocation topics as shown in the Conference Programme section and mentioned in the Summary Reports and Overview section.

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Note from the editor

THE ALLOCATION ASPECTS OF FISHERIES MANAGEMENT

We all know that fishing means vastly different things to different stakeholders. If you are a subsistence fisherman, catching fish may mean the difference between having food to put in your child's stomach and going hungry. If you are a commercial fisherman, catching fish is about making money and may mean the difference between being able to pay your bills and having the bank foreclose on your boat. For recreational fishermen, it may be that the quality of the fishing experience may mean as much or more than actually bringing home fresh fish, but the recreational outing or event certainly involves having a "sporting chance" of at least having some fish to catch. And, for the folks who simply like to know that there are sustainable levels of fish somewhere "out there" to enjoy knowing about and for our grandchildren to appreciate, it is simply just knowing that fisheries are not overfished.

Once upon a time, there were fewer people and our fisheries resources plentiful enough that all people could fish and all types of different interests could all be accommodated. But that was once upon a time. Nowadays, we're in the invidious situation that we have limited resources, many more people, and we have to share what we have. This means finding ways of sharing that do not cause conflicts, either within stakeholders groups, or between them. But what can we do to share successfully?

All types of fisheries management regulations, inevitably but implicitly, allocate fish in some way, and hence it is important to also consider the allocation impacts that regulation can have. Time closures can affect participants with less powerful boats in ways different from more powerful boats, gear restrictions may affect users of one gear type more than another gear group, vessel size restrictions may affect different vessel owner groups, area closures can affect participants originating from different ports, etc.

Indeed, it is important to consider the positive and negative forces and impacts that are created by fisheries management regulations and to be aware of the effects that different management approaches will have on management costs and complexity, fishing capacity, stakeholder groups, social objects, and sustainability and resource objectives.

TACKLING THE QUESTION OF SHARING THE FISH

The idea for the conference was first raised when Peter Rogers was closing the *FishRights99*: Use of property rights in fisheries management – a conference that was also held in Fremantle, Western Australia, and similarly hosted by the Department of Fisheries of the Government of Western Australia in cooperation with the Food and Agriculture Organization of the United Nations (FAO) six years prior. The topic was also an obvious next step after *FishRights99*, given the emerging realization that such sorts of management systems are frequently more successful than command and control approaches to managing many types of fisheries for both economic and biological viability.

This brings us to the question of rights-based fisheries management systems. Rights-based fisheries management systems – of which there are *many* types and *infinite* variations – have to grapple with the issue of allocation on an explicit basis, both in their design phase and in their implementation phase. Indeed, one of the obstacles to establishing rights based fishery management systems involves resolving issues of initial and subsequent means of allocation instead of simply choosing to ignore them or relegating them to the "too hard" basket. Thus, it made sense to at least start to try

to address the complex and multifaceted issue of allocation in the hope that we may improve our understanding of what has worked, what has not worked, when, where, how, and why.

And so, the idea was nurtured by both the FAO and the Department of Fisheries Western Australia to create Sharing the Fish '06 Conference. Indeed, it is a tribute to the Department of Fisheries Western Australia that it hosted another globally relevant conference – attracting 346 delegates - on an issue that is at the heart of all we do in fisheries management, and FAO again enjoyed collaborating and cooperating with the Department.

Given the short duration and lengthy nature of the topic, the conference organizers designed an artificial structure that was intended to help participants focus on the fundamental question of: “How may fisheries managers and policy-makers go about considering, undertaking and implementing the allocation of fish resources to ensure their sustainability, be these issues considered at the stakeholder, local, national, international or regional level?”

Of course, the reality of the fisheries world is quite a far cry from our “optimal” visions – as the overlaps and similar messages that emerged from these different themes serve to remind us. Nonetheless, the conference was structured under three main themes with a substantive keynote and several invited speaker presentations serving as the starting point for further discussions on:

- Allocation across jurisdictions – including governmental, regional and multilateral issues at the high seas, regional and national levels;
- Allocation between/across sectors – including spatial/temporal, extractive/non-extractive issues as well as those of allocation between the indigenous, commercial and recreational sectors; and
- Allocation within sectors – including the allocation issues which come up as part of commercial and recreational management.

In addition, there was a concurrent session on some of the approaches and tools that can be used to approach the problem of allocation as well as one on the mechanics of the reallocation of resources between the commercial fishing sectors of the Torres Strait.

LOOKING BACK AND FORWARD

From the perspective of the years subsequent to the Conference, the slow pace with which allocation issues are being addressed reflects the sensitive nature of the topic and the difficulties associated with grappling with it. Yet, progress – and it is progress - is being made, and there is now more interest in this topic than that which existed at the time of Sharing the Fish '06 Conference.

This seems to be being driven by two fundamental realizations. First, there is an ever increasing awareness of just how unsuccessful – and expensive - our management efforts have been in fisheries around the world. Second, there is a growing realization that establishing fisheries rights systems – of one sort or another (and *not* just individualistic systems) - is a responsible way forward for ensuring viable and sustainable fisheries.

Thus, we need to get on designing the *best* systems for our many different types of fisheries. Whether rights-based systems are group, territorial or individualistic, their design and subsequent implementation require addressing the notions of exclusion and inclusion – of allocation – and so it behoves us to do this thoughtfully and with strong awareness of the human, economic, and biological implications of our actions. Real life is messier than theoretical models, yet models of so-called perfection can also serve as useful backbones for our real life and, hence, messier management undertakings.

SUPPORT FOR SHARING THE FISH '06 CONFERENCE

Sharing the Fish '06 Conference was possible only through the generous support of a number of sponsors who provided either direct financial support or made available

staff who were essential for the conference's success. Special thanks go to Peter Rogers, Peter Millington, Greg Paust, and Fred Wells of the Department of Fisheries of the Government of Western Australia. Special thanks, too, are due to the Western Australian Fishing Industry Council's Guy Leyland and the MG Kailis Group's George M. Kailis who have seen the need for the fishing sector to constructively engage with government and academia to start addressing the core issues of concern for the fishing sector's future.

To all, named and unnamed, my deep thanks for your intellectual support to continue the Fremantle Series and for your personal efforts to cover the gaps created by my repeated surgeries during the planning years and, as life would have it, the week prior to the conference. I drew heavily on a number of personal relationships to have people to fill in for me, and I am very greatly indebted.

Conference organizing committee

Unlike many other conferences which may have both a Steering and a Programme Committee, these were merged into a Conference Organizing Committee which was responsible for the overall direction of the conference, its organization, content and the detailed development of the conference themes, including selection of the keynote speakers. Members were:

- Peter Millington (Chair), Director of Fisheries Management Services, Department of Fisheries Western Australia
- Greg Paust (Program Chair), Deputy Director – Integrated Fisheries Management, Department of Fisheries Western Australia
- Rebecca Metzner, Fishery Officer, Policy, Economics and Institutions Service, Fisheries and Aquaculture Policy and Economics Division, FAO Fisheries and Aquaculture Department
- Mark Edwards, Manager, Fisheries Policy, Ministry of Fisheries New Zealand
- Cream Gilda S Mau, Senior Policy Officer, Domestic Fisheries Policy, Australian Government Department of Agriculture, Fisheries and Forestry
- Catherine Smith, Manager, Domestic Fisheries Policy, Australian Government Department of Agriculture, Fisheries and Forestry
- Guy Leyland, Executive Officer, Western Australian Fishing Industry Council
- Steve Dunn, Deputy Director, Pacific Islands Forum Fisheries Agency

Sponsors

Sharing the Fish '06 Conference was only possible because of the generosity and commitment of its various sponsors:

Australian Government's Fisheries Research and Development Corporation
 Department of Agriculture, Fisheries and Forestry
 AusAID
 New Zealand Ministry of Fisheries
 Queensland Government Department of Primary Industries and Fisheries
 Government of South Australia Primary Industries and Resources SA
 Northern Territory Government Department of Primary Industry, Fisheries and Mines
 MG Kailis Group
 Western Australian Fishing Industry Council Inc

PREPARATION OF THE PROCEEDINGS

The preparation of these proceedings can only be described as the result of a serious team effort. Dr Fred Wells, Western Australia, made the enormous undertaking of tackling the papers from the concurrent sessions for their primary editing. At the FAO end, without the transcriptional and editorial efforts of Ms Yuanbo Liu and Ms Dana

Isokawa, the documentation and presentation of the papers from the plenary talks and daily recaps of the concurrent sessions would have made my work of attempting to establish a more uniform style of presentation – in part dictated by my institution’s publishing conventions – and the documentation of the sessions almost overwhelming.

Finally, I have to beg the indulgence of the keynote and invited speakers who carefully scrutinize my documentation of their work or presentations and assure them that I made every effort to ensure their messages have come across as intended but, in the end, any errors are mine.

CONCLUSION

From a much more personal perspective, after investing several years in the process of designing and organizing the conference, I was unable to attend for health reasons. Thus, preparing these proceedings – listening to the presentations, transcribing, editing and organizing the papers – has been much more than the process of preparing proceedings.

Indeed, I have had the opportunity – and privilege – to learn more about the personal and intellectual aspects of each and all of the participants as well as to gain a sense of what one participant aptly described as a *stimulating and thought-provoking experience*. The conference was not as representative as it could have been in a more perfect world with many sponsors and low travel costs, but it was a start and has provided a foundation, identified gaps in our thinking, and set the scene for much-needed additional work on the topic.

Markets and their use of money certainly are an understandable medium of exchange that results in decisions that may be less arbitrary than, for example, policy decisions premised on subjective or other means of measurement – but the questions remain as to (i) whether markets and money are really the “best” vehicle and, if not, (ii) what alternatives there are. It has become clear to me, too, that it is important to work towards maintaining (but not necessarily pigeon-holing or otherwise constraining) cultural values and social structures without compromising the economic benefits of fisheries resources.

In closing, I am most thankful that each and every one of the participants has provoked and inspired changes in how I – and perhaps future readers, too – will think about how to go about working on the question of sharing the fish. More than ever, it is clear that rights-based fisheries management systems need to be designed to consider social and cultural values, existing governance and institutional structures (or the lack thereof), the strength of legal systems and their ability to uphold rights, to name a few. In short, it is imperative that we genuinely mean it when we say there is not one single style of rights-based system that will work for all fisheries situations – and, having said that, we *act* accordingly.

Rebecca Metzner

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Summary reports and overviews

1. CONFERENCE THEME REPORTS

The Organizing Committee made a conscious effort to bridge the inevitable information gap created by concurrent sessions by designing time into the program each morning for reporting to the plenary about the topics and issues raised in each previous day's afternoon concurrent sessions. Thus, the summaries which follow here have tried to capture the main issues and ideas that emerged from the thirteen thematic sections of the concurrent sessions as presented by the rapporteurs.

Thanks go for the great effort on the part of the concurrent session chairs and, in particular, the appointed rapporteurs who had to distil the substance of their sessions and prepare reports. Special thanks go to those involved in making this work as well as it did.¹ The documentation provided by the reports is also gratefully acknowledged, and great thanks are due to the whole of conference rapporteurs, Profs. Hanna and Hilborn. Their task was daunting, yet it was beautifully, thoughtfully and constructively executed.

As Prof. Hanna noted at the beginning of her end of program overview, the conference was designed to bring some sort of systematic order to what is a very large topic – the subject of allocation and all its many dimensions across jurisdictions, across sectors, and within sectors. By necessity, not all topics could be considered within the three thematic areas, but that simply creates room for future conferences to continue work on this topic and to go further in demystifying and systematically addressing and sharing information about the allocation issues arising in many, but certainly not all, types of fisheries in our world.

1.1 Theme 1: Allocations across jurisdictions

The topic of allocations across jurisdictions was divided into issues of allocation on the high seas, at regional and national levels, and also covered some of the allocation issues relation to the involvement of Australian indigenous groups in fisheries management.

1.1.1 *High seas allocation issues*

Although the talks in this theme covered a wide range of topics, there were several recurring themes that came from the presentations and papers in this concurrent session:

- In determining fair allocation shares, it is useful to have guiding principles of resource sharing and to be aware of the incentives that can drive or impinge on negotiation processes that are part of setting these up.
- The strengths and weaknesses of management arrangements of regional and high seas fisheries (predominately those in the southwest Pacific Ocean) are becoming clear.
- The legal and policy precedents of international allocations and the trading of fisheries quotas or shares among States do exist.
- Economic analyses are valuable for assessing the benefits and costs of policies, including the unintended consequences of management decisions in one fishery and their impacts in others. and

¹ In alphabetic order, morning rapporteurs' reports were ably provided by: Britt Maxwell, Len Rodwell, Richard Sisson, and Neil Thomson for Day 1; Transform Aqorau, Andrew Hill, Graeme McGregor, and Mark Pagano for Day 2; and Heather Brayford, Rick Fletcher, Amanda Hamilton, Antony Lewis, Jo McCrea, and Guy Wright for Day 3.

- There are challenges to regulating unregulated high seas fisheries, but it is useful to remember that there is also a range of solutions available, from outright moratoriums to market-based systems of management.

In looking forward, it was noted that it would be useful to combine the knowledge and experience from these sessions into a paper, with the objective of starting to outline what is best practice in high seas and regional fishing governance and allocation arrangements. Doing so, it was noted, would provide the platform for addressing the questions of: (i) What can we do now? (ii) Where are the gaps? and (iii) Does a market solution – or any other solution, for that matter – start to fill the gaps?

1.1.2 Regional allocation issues

Whether bilateral or multilateral, the regional allocation issues theme similarly had several recurring messages which emerged:

- The setting of limits within the membership of a regional management entity provides an opportunity for members to introduce a rights based approach to management and, subsequently, increase the benefits members can derive from the fishery or fisheries in question.
- The resolution of allocation issues by members is critical to addressing conservation concerns.
- The management measures already taken do, as is mentioned elsewhere, have allocation aspects which will, in many cases, continue to flavour the design details of future rights-based systems.
- The success of sharing arrangements – as when developing any management arrangement – may be heavily influenced by the extent to which the factors of accountability, flexibility, efficiency and the use of the ecosystem-based approach to fisheries management are present and upheld. Indeed, it was considered that ownership of the process, from fishermen to participants involved at the regional level, is a key ingredient for success.
- There is a role for explicit equity-related provisions in sharing fish between developed and developing countries.

The main lesson learned was that, inevitably, there will be similar approaches to allocation adopted. There are only so many ways to share, to allocate fish – so it is critical to look at the circumstances that provide the best results for the participants involved.

1.1.3 National allocation issues

Of all the papers presented, if there was one key message, it was that *expectations* – rational and otherwise, based on historical facts, traditions or merely perceptions – play an important part in any discussion about resource allocation.

The array of interrelated presentations presented a variety of perspectives – those of the facilitating resource sharing arrangements, those involved in them, those having to manage them, those stakeholders who want to be involved, and of those designing them – and yet managed to highlight several consistent themes. Key findings of the sessions included that it is important to:

- develop a process or work within a policy framework, not only in terms of jurisdictions and legal responsibilities, but also in terms of respective roles;
- clearly establish who is involved and in what capacity (partner or stakeholder);
- determine the facts, especially regarding pre-existing rights (and whether real or perceived);
- use comprehensive (and preferably compatible) data, as it is crucial to good decision-making;
- identify, clarify and manage expectations;
- extensive and meaningful consultation is essential; and

- take ecosystem needs into account before allocating the biomass to various fishing sectors.

Again, and especially from the practitioners' perspective, it is critical to be able to identify what can and cannot be achieved when undertaking allocation actions – i.e. to genuinely clarify expectations among all involved – and to have a resource sharing agreement that includes, comprehensive data, transferable allocations, and manageable and measurable total extractions.

1.1.4 Australian indigenous allocation issues: South Australia and Northern Territory perspectives

The papers in this session focused on the ways and means of involving indigenous Australians in fisheries management. Although early decisions have been based on customary non-commercial use of fisheries resources, the principles and networks developed generating the Indigenous Land Use Agreements (ILUAs) under the Native Title Act 1993 will provide a significant degree of trust to commence discussions about the allocation of resources for indigenous commercial fishing as well as customary indigenous fishing.

Key points and findings of the presentations related to what was learned in terms of management, legal issues, and responding to aboriginal and commercial fishing interests:

- Management – The lessons learned include the need to: (i) establish broadly agreed principles on which negotiations and actions are based (e.g. the National Principles); (ii) maintain enough flexibility to let local issues drive local arrangements; and (iii) include allocation in management decisions to avoid management making allocation by proxy through management arrangements.
- Legal issues – The inclusion of indigenous customary use in new fisheries management plans was, in part, as an alternative to the uncertainty, duration and potential divisive nature of the litigation process and, indeed, the outcomes of such a process.
- Aboriginal stakeholders – The inclusion of aboriginal stakeholders in the decisions demonstrated the importance of providing a legitimate place at a table which includes all stakeholders and ensuring that spokespeople are genuinely representative and aware of the spiritual, emotional and substantive issues.
- Commercial fishing stakeholders – benefits and strategic approach to identify goodwill, potential means of limiting the diminishing of commercial fishing rights, and the training of indigenous people in fishing.
- Definition of rights, co-management opportunities, and the allocation of future commercial interests to valid stakeholders.

It was clear that relationships and communication are central to developing strong, successful and enduring outcomes that enable people to move forward in the fishing sector. In particular, the two key recommendations from the session were that:

- frameworks which build a set of mutually reinforcing systems need to be developed; and
- building trust and communication allows for negotiation and the development of appropriate arrangements which satisfy the aspirations of management, commercial, recreational and indigenous interests.

1.2 Theme 2: Allocations across sectors

Within the theme of allocations across sectors, there were four concurrent themes: Spatial/temporal allocation issues, extractive/non-extractive sector issues, allocation between commercial and recreational sectors, and commercial management issues.

1.2.1 *Spatial/temporal allocation issues*

The ten papers within this session regarding spatial and/or temporal allocation issues made the respective key points of:

- If an allocation framework is really necessary, it should not necessarily involve the government intervention.
- For equity reasons for the fishing industry, allocations to non-fisheries sectors should be reconsidered, if not reduced.
- Spatial allocation exclusively to the recreational fishing sector can promote harmony through increases in fish stocks.
- Data is essential, particularly in situations where localized targeting of stocks may or may not coincide with spatial allocations.
- It may be useful to implement spatial and temporal programs up front, not after a fishery has been well established.
- Competition for coastal space, especially between aquaculture and capture fisheries, security of access rights is a fundamental element of successful programs.
- Representative stakeholder interest and involvement, from a variety of sectors, is vital for successful and enduring allocation systems and minimize conflicts.

In summarizing the session, it was noted that there were three possible categories of issues raised: first, who fishes where – with rights going to either the commercial or the recreational sector; second, who decides where to fish – whether through direct government intervention or other means; and third, how the decision is made regarding who gets to fish and where – whether through non-regulatory actions, co-management activities, market-based systems, or means. Perhaps the most innovative proposition of the session was for the establishment of dedicated protected productive commercial fishing areas to secure the future of the fishing industry, with the caveat that other users access the other areas should have temporal access rights.

1.2.2 *Extractive/non-extractive sector issues*

There were essentially two groups of papers presented: those about marine planning and processes that have affected marine resource allocation, and those about their direct and indirect impacts on allocation of marine resources. Zoning and rezoning topics – and the social challenges including compensation associated with these were flagged as important elements. Key points and findings included that:

- Marine protected area zoning may result in de facto reallocation from the commercial fisheries sector to tourism and/or conservation.
- Zoning processes can significantly alter the economic viability of (fishing) activities.
- Resolving conflicts before users and implicit allocations become entrenched is useful.
- Social impacts tend to be underestimated (particularly in the absence of full information) and, when underestimated, can create significant challenges to planning and budgets.
- Broad management frameworks are useful for marine planning to guide the myriad of considerations that should be taken into account.

Where there are processes for non-fishing planning, it was noted that is useful for MPA and fisheries managers to work together to achieve both economic and conservation issues. Broad-based marine planning processes need to fully identify the scope of all users, stakeholders, and uses.

Authors pointed out that competition between uses – such as between the establishment of MPAs and commercial fishing – need to be recognized and addressed along with the potential to create a race for space. Political and human factors can and will strongly influence outcomes, and it is vital to encourage full stakeholder engagement and participation. Both market and planning approaches can co-exist

usefully, but it is important that these approaches be consistent across and within various sectors. Mechanisms to provide economic returns to those affected by direct or implicit reallocations from one group to others are an important, but frequently unaddressed, consideration. In particular, with establishing marine protected area networks, it was emphasized that clear rights and objectives, stakeholder values, accountability and recognition of biological, social, and economic impacts are important elements of successful programs.

1.2.3 Allocation between commercial and recreational sectors

While it was noted that there are far more users than simply commercial and recreational fishers, including indigenous, customary, conservation users, the session focused on the former. Two common themes in the two sessions included the (lack of) data especially, for the recreational fishing sector and the need for the involvement of all stakeholders in processes. Key messages of the session included:

- Recognition of both stakeholders' respective rights and responsibilities is vital, particularly as allocations among sectors are increasingly clarified.
- Discretionary allocations can be problematic, and the use of more rigorous framework can be constructive for providing certainty and the opportunity to maximize value of fisheries resources.
- While most attention to date is on initial allocation issues, it is useful to consider subsequent reallocation issues, particularly as fisheries grown and change.
- Clear allocation policy, catch and effort data, extensive stakeholder involvement, and reliable commitment to policy are essential ingredients for secure and successful systems.
- Clear priorities are extremely useful for facilitating allocation decisions, along with security, exclusivity, permanence, and transferability.
- Reallocation of sector shares may be catch-based, negotiated, valuation-based or market-based, with advantages and disadvantages in terms of legitimacy, operational and enforcement costs, and stakeholders' incentives.
- Policies collaboratively developed and operated with stakeholders can provide guidance, structure, and flexibility for achieving users' respective outcomes.
- The design of allocation programs should reflect the unique characteristics of a fishery or fisheries prior to selecting on particular approach to management.
- The lack of data, particularly for the indigenous, customary, and recreational fishing sectors needs to be addressed.

In summary, it was noted that no one size management approach fits all situations, and that the conditions and characteristics of the participants in a fishery need to be seriously considered and taken into account in the design of allocation strategies and management systems.

1.2.4 Commercial management issues

Addressing current inadequacies, especially regarding ownership and control matters, harvesting rights, and quota management systems were the focus of papers in the session. The emphasis was on the economic and social objectives that can focus the choice of individualistic or community-based systems among other things.

Key success factors mentioned included sustaining high resource rentals, while ill-defined guidelines, indeterminate timeframes, lack of funding, and a lack of financial incentives for stakeholders were noted as undermining rights-based systems. Additionally, it was noted that evolutionary changes to rights-based systems and issues such as the encroachment on such systems by allocations to sectors outside the management framework can seriously threaten the success of (commercial) sector management using rights-based systems.

1.3 Theme 3: Allocation within sectors

The allocation within sectors theme was supported by four groups of concurrent session papers: those addressing commercial allocation issues and sector allocation management; commercial allocation issues: allocation and reallocation processes; recreational allocation issues; indigenous, recreational and commercial allocation issues; and approaches to the allocation problem and regional allocation issues.

1.3.1 *Commercial allocation issues: sector allocation management*

Papers in this session revisited and highlighted the definition of economics, namely, that economics is the study of the allocation of scarce resources among competing uses.

Ways forward for improving the economic aspects of fisheries management and management advice include: greater stakeholder involvement in management processes to increase awareness of the commercial and economic aspects of fisheries and their management, and the use of bioeconomic – not simply biological - stock assessment. The strength of linkages between good governance including independence from both internal and external political influence, equity, transparency, economics, biology and social sustainability were put forward as strongly influencing the success of fisheries management systems.

As in some other sessions, it was highlighted that even the use of rights-based systems may not result in successful outcomes if the particular form of rights-based system is not appropriate for the resource being considered. Hence, it is useful to consider the range of rights-based systems that are available and implement accordingly.

Key points reinforced messages throughout the conference, including that:

- People management is as important as stock management.
- Common managerial characteristics include the will to succeed, the ability and a supportive governance structure to make decisions in uncertainty, the ability to take a long-term perspectives, and industry cohesion.
- Stakeholder concerns, aspirations, and perceptions need to be addressed equitably
- A one size fits all management approach does not fit all fisheries conditions.
- Management approaches need to be based on biological, economic, and social considerations.
- The absence of property rights elements in a management system will likely commit a program to failure.

1.3.2 *Commercial allocation issues: allocation and reallocation processes*

Several papers in this session continued to emphasise livelihood agendas and economic agendas – in addition to biological agendas – and their importance for successful management regimes. Issues of social justice, internal and external perceptions of fairness, artisanal concerns and community concerns need to be addressed. Because property rights can and do have distributional and equity issues, participants noted that both for individual fishermen and for fishing communities, the benefit flows from rights-based systems will be influenced by ownership rules. Additionally, it was noted that management of expectations and undertaking processes when stocks are in relatively good condition can facilitate these activities.

Participants recognized that the economic and local social impacts of management processes need to be rigorously considered, including community versus individual objectives, and that broader issues include who can own shares and the related topic of consolidation of shares.

1.3.3 *Recreational allocation issues*

The session covered a diversity of topics, including recreation sector involvement in allocation processes, fishing for food or for fun, management of recreational fishing,

the effectiveness of stakeholder involvement in allocation processes, and issues related to who actually owns the fish being allocated.

Factors of success were noted as including transparency, legitimacy, and coherence at local and national levels. It was also noted that, the allocation “battle” between commercial and recreational sectors continues without resolution. Lessons learned include the need to:

- understand the aspirations of fishers;
- quantify recreational participation;
- link the right to fish to a clear annual entitlement; and
- provide for regular and strong compliance and education.

It was also noted that perceived fairness of fairness may not necessarily reflect the level of involvement in fisheries management, but stakeholder involvement may be enhanced via the method of invitation to involvement, the details of the consultative process, the provision of information, improved methods of engagement, the need for continuous involvement and comment, and the need to review processes along the way – so as to help tailor processes to the situation.

It was also recognized that improvements in stakeholder engagement are critical and proportional representation, even if mandated formally, may make a useful contribution to the legitimacy and success of recreational fisheries management.

1.3.4 Indigenous, recreational and commercial allocation issues

The session covered a range of developments in indigenous and traditional fisheries from the rights of coastal communities, traditional fishers, definition of the rights of customary fishers and inclusion in fisheries management processes, and the post-allocation situation of indigenous rights to maintain and use fisheries assets.

Issues relating to erosion of rights - to new activities such as marine reserves or reallocations of rights to other sectors - featured prominently with emphasis on the need for robust, participatory negotiated processes for resolving challenges and conflicts and clear strategies. Participants emphasized that the incorporation of indigenous people and concerns in a policy framework could be used to help clarify the role of indigenous communities in fisheries management and allocation decisions.

Once again, participants expressed the need to design fisheries management systems that help to maintain social fabric, culture, and traditions of coastal, traditional, and artisanal communities because allocation decisions can have profound impacts on communities and thus such decisions should be carefully and seriously considered to avoid negative socio-economic consequences and marginalization of those most in need. Thus, in terms of findings and recommendations, it was expressed that there is the need:

- for solid policies and legislative frameworks to secure rights for indigenous people;
- for strong governance and institutional structures, including post allocation, and with a legislative basis when possible;
- to avoid, mitigate and compensate for the adverse impacts of the allocation of new rights on existing rights holders;
- for inclusion and recognition of indigenous peoples in consultative frameworks and structures;
- for a customary framework or strategy to be in place before allocations are made; and
- to recognise and address the social and economic impacts of allocation systems, particularly those affecting potentially marginalized groups.

1.3.5 Approaches to the allocation problem: regional allocation issues

The session highlighted the tools and mechanisms that can be used to assist managers with decisions about ongoing allocation activities, particularly for recognising and addressing the social issues associated with ongoing allocation activities.

Because the social systems around fisheries will affect how individuals and communities experience and manage change, social impact assessments can be helpful in understanding how management and allocation changes can be designed and implemented. The use of dynamic models may aid in decisions about making allocations, thereby helping to clarify non-commercial, social and recreational values – and various allocation scenarios as a result. New approaches to data gathering to support management decisions need to be considered, particularly in light of shrinking budgets, to avoid situations whereby data is so sparse as to undermine the validity of its use.

The common theme throughout the session was that there is a need to go beyond typical fisheries management considerations and to look to forecast long term costs, acquire data to support management, and to understand the motivations of affected stakeholder groups. Doing so would not only facilitate management processes, but also lead to better outcomes.

1.3.6 Reallocating resources between fishing sectors in Torres Strait commercial fisheries

The session covered the shift from input controls to ITQs in the Torres Strait commercial prawn, tropical rock lobster and finfish fisheries, beginning with a history of management arrangements and the 1985 treaty between Australia and Papua New Guinea establishing a Joint Authority; recent key decisions; the details of advisory panels and the commercial buyback scheme; and the long-term commercial views of the implementation of these decisions.

Debates over allocation issues have been heated, particularly as input controls were increasingly constrictive until 2005, the implementation of a buyout scheme, and the development of an ITQ system to be implemented in 2007 for the 50% allocated to the commercial sector.

Lessons learned included that allocation issues need to be explicitly addressed to resolve them, that the use of an external expert panel facilitated acceptance of decisions, and that a rigorous timetable to which managers adhere has helped to create goodwill and support for the process.

2. WHOLE OF CONFERENCE OVERVIEWS

Perhaps one of the most daunting tasks of rapporteuring an entire conference is to find the recurring themes that run through an enormous topic – in this case, the topic of allocation. Sharing the Fish '06 Conference was extremely fortunate and honoured to benefit from two such reports. While not formally part of the conference proceedings, per se, the presentations are summarized below to provide an overall sense of the issues, ideas, and areas for future work that emerged during the conference.

2.1 Prof. Susan Hanna

In looking at the enormous subject of allocation, Prof. Hanna noted that the general themes that emerged from the papers during the conference could be summarized into two categories:

- the context of allocation and in which allocations decisions are made; and
- the identification of some emerging general trends and issues that point to future directions for the work on the subject.

The context of allocation

In terms of allocation and the context of allocation, the themes that emerged included: the properties of ideal allocation, the influence of scarcity, the functioning of institutions, the scope of allocation, the resilience of allocations, and the controversies surrounding allocations.

She noted that allocation is really at the heart of economics because it is about allocating scarce resources among competing ends, yet it is important to remember that this is an old problem in the fisheries sector and has always been imbedded in fisheries management decisions. Indeed, now, the discussion was simply becoming more explicit.

A number of ideal properties of allocation were highlighted, including that they would be:

- targeted towards specified management objectives;
- promoting efficiency;
- equitable and, so, legitimate;
- clearly as well as fully specified;
- backed by legal authorities;
- able to establish credible commitments of either threats or promises;
- transparent;
- create consistent expectations among users and all parties to the allocation;
- enforceable; and
- flexible to changing conditions in fisheries ecosystems and markets.

In the less than ideal context of real life fisheries management, it is there that the above-mentioned properties take on very specific meaning and take on form as they enter a context of the diverse economic, social, cultural, biological and ecosystem dimensions that are part of the fisheries world.

Prof. Hanna pointed out that the relative scarcity driving allocation issues is created by demand for resources exceeding the supply – both of biological and managerial resources. Thus, in looking at the evolution of allocations over time in fisheries management, when the demand for resources exceeds supply, and transactions costs are generated as management tries to address those competing demands over limited resources and engages in more expensive information, coordination and conflict resolution. However, at some point the transactions costs become high enough so as to be unacceptable and management begins to look for new solutions, for new allocations that may be less costly or, at least, contain those transactions costs.

Prof. Hanna recognized that allocation is a core function of institutions – be they government institutions or market institutions. Moreover, institutions set up the “rules of the game”, and their job is to get the incentives right, to generate benefits, to distribute those benefits, and to contain and manage the transactions costs. And, she noted, it has been and continues to be a continuous conversation as to which form of institution, government or market, works best for fisheries – and the discussion is getting richer, broader, and more complex in its scope.

At the time that market mechanisms were introduced as an allocating tool into what had been the traditional realm of government, the discussion was quite narrowly focused on efficiency and individual rights, sometimes to the exclusion in many cases of other objectives of fisheries. However, over time, the discussion has broadened both over the role of governments and of markets as allocative mechanisms in fisheries.

For governments, she noted that there is movement in governments away from the centralized government decision-making about allocations to the much more active involvement of stakeholders, including some sharing of responsibility and authority with stakeholders in some co-management arrangements sometimes with the assignment of management rights in community-based fisheries resource management. Thus, there is a much broader scope for how government is involving stakeholders in the allocation process.

Similarly, she noted the broadening of the discussion of property rights systems, beyond being exclusive to individual property rights to many different forms of tradable property rights, including cooperatives and property rights assigned to communities.

The challenges of allocation are growing as the scope of the allocation discussion broadens. Part of the reason for these growing challenges is that relative scarcity in fisheries has increased as demand exceeds supply, but the scope is also broadening because many more interests are part of the allocation discussion than traditionally. Now, allocations are being made over space, over time, over a wide variety of human interests ranging from commercial and recreational, customary, subsistence, non-governmental organizations, and tourism interests; in short, a much broader array of human interests is being represented in allocation discussions. In addition, policies are being developed that have explicit requirements for allocations to ecosystem interests and needs of components of the ecosystem. Moreover, these increasingly complex discussions require significant information for understanding and framing these more complex allocation questions.

Many of the papers, she noted, illustrated the ways allocation decisions can be undermined, and this pertains to the matter of setting up allocations can be considered resilient over a range of perturbations. However, because there are many ways that allocations are set up that leave them vulnerable and less than resilient, particularly under conditions of poor enforcement where the whole structure of an agreement can be undermined when the rules are not enforced. In addition, unconstrained growth of a sector – as is occurring as part of the commercial - recreational sector allocation context where one sector has a limit on its participation and the other sector is still in a growth mode – can undermine an allocation.

So, too, it was noted that conflicts can undermine allocations, and the weak specification of an allocation is an obvious example of this occurring. Not getting incentives rights, so that people are working against an allocation constantly, and having incompatible policies will also undermine allocations.

And, she noted, that allocations are controversial and that this was a continuous theme throughout the conference. One obvious reason for this is because they involve winners and losers, something which will by necessity generate controversy, yet there are also other equally important reasons for the controversy, one of which is the competing visions for fisheries and the inability to clarify objectives for a fishery. Whether emphasising tradition or innovation, efficiency or equity, use or non-use – it was noted that these different visions need to be resolved. Finally, she pointed out, that many allocations can become controversial because the decisions are made later (rather than sooner) and when positions are hardened, thereby limiting scope for negotiation and compromise and increasing transactions costs.

Key findings and looking forward

In recognizing some of the key findings and themes emerging from the papers and discussion, Prof. Hanna focused on the issue of weak governance and the need for fully specified property rights as being fundamental for resilience.

She noted that throughout the conference there was a recognized need to transition out of what is accepted to be weak governance systems because of the increasing social, ecological, cultural and economic costs that society is bearing as a result of continuing with weak governance systems.

The agreed need to move away from certain aspects of weak governance such as freedom to fish, the negative incentives, weak enforcement, poor accountability, and very high transactions costs and included the need to move towards a different form of governance that is much more value-added (rather than volume-based); performance based, ecosystem oriented, flexible and accountable. Moreover, it was recognized that this transition needs to happen in all fisheries – from community to national, regional and international levels – because all are facing the issue of weak governance.

She noted that history has left a legacy of problems of overinvestment, low economic performance, cumbersome management processes, and the extensive effects that have

resulted from the way we have thus far managed the race for fish – and that this history and path dependence inevitably limit the scope of action that we can take – at least in terms of expectations, if not also in terms of reality, of the sorts of actions that can be taken.

In transitioning to a different kind of governance, she noted the discussions during the conference called for a variety of ways forward, including design requirements such as:

- the crafting of better frameworks – to address the very kinds of tradeoffs that are explicit in a broader kind of allocation;
- the development of better understanding - of how to craft incentives to support sustainability, so that people are taking long term perspectives and that their behaviour is compatible with what society has defined as sustainability needs;
- the need for better understanding of how to craft better incentives for ecosystem protection that work with human nature and rational self interest and also achieve environmental goals; and
- the development of better processes for the development for mutual cooperation – such mentioned in the high seas and cross-jurisdictional discussions of the conference.

Her summary also noted that the transition also carries with it requirements for legal authorities that are in place to enable allocations across jurisdictions, across sectors, and that are able to implement effective enforcement. Finally, there are requirements for new processes - for data generation and for education. In changing the way in which fisheries and fisheries management is considered, there are significant public education needs that need to accompany such a transition.

Moving to another theme emerging from the conference – namely, the full specification of property rights as a fundamental to promoting resilient allocations - she noted both that incomplete specification of allocations across sectors and jurisdictions can undermine allocations, and that tradable rights are the most effective way to reflect different and changing values unless one decides to proceed in the data intensive mode of estimating values.

The discussions made it also clear that rights can take a variety of forms and that they did not have to be individually specified rights as long as they have certain core properties of being fully defined, divisible, transferable and secure. Indeed, the discussions noted that property rights offer the opportunity to address a wide scope of incentive problems, but that it is also clear that efficiency is not necessarily the only objective. Indeed, the discussions identified a need to design innovative and different types of property rights systems that address different combinations of efficiency and equity that may be desirable in different types of fisheries sectors – subsistence, small-scale, community, recreational, customary, transboundary, high seas – in terms of applying ideal properties to specific contexts.

The question in moving forward, she summarized, is one of how to achieve the governance properties that create strong, resilient efficient governance within these very different kinds of social contexts. In doing so and getting to stronger governance, she noted that there is a great need for pragmatism. We need to avoid getting trapped in wishful thinking that ignores the very real fact that there are transaction costs and incentives associated with all alternatives available to us, and that we need to mesh the kinds of allocation and governance designs that we derive with our understanding of incentives, costs and rational self interest – in ways that we can very practically move the system towards desired outcomes.

2.2 Prof. Ray Hilborn

In placing the conference in the bigger picture of fisheries, Prof. Hilborn noted that the conference was providing a useful and constructive opportunity for learning from successful experiences of others regarding allocation – but that the experiences being

shared at the conference were from the largely industrial fisheries which represent a small portion of the world's catch and a smaller portion of the people making a living from fishing. Hence, he noted that one relevant question was whether there are lessons for the rest of the fisheries of the world that can be garnered from these experiences in developed countries.

Key lessons

Looking at the objectives of fisheries management – achieving maximum sustainable yield, providing for jobs and communities, ecosystem preservation, and (the newer) objective of economic profitability and maximum economic yields – he noted that the fisheries world seems to be making the transition from traditional to newer forms of fisheries governance. More specifically, it has been moving away from the business as usual scenario of management characterized by top down, command and control approaches, where there is no role for rights and dedicated access programs and a primary emphasis on marine protected areas and restrictive total quotas. Indeed, it has been moving towards a newer approach to fisheries management that seems to encompass an emphasis on rights and dedicated access to stop the race for fish, growing recognition of the necessity of complete specification of rights and allocation and the use of protected areas to guard biodiversity (but not as a management tool, per se).

In examining the three pillars of fisheries management – allocation (being discussed in the conference), enforcement, and science – Prof. Hilborn pointed out that we have to realize that effective allocation contributes to effective enforcement and science. Thus, in pulling out key lessons, he noted:

- Allocation is an essential part of good fisheries management, and there were many papers at the conference which indicated how a lack of hard allocation leads to bad outcomes.
- In the absence of hard allocation (firm allocations to all sectors), catch regulations becomes an implicit form of allocation.
- Most jurisdictions under discussion in the conference are moving to some form of allocation through dedicated access.
- It is clear that the primary framework needs to be about the incentives. When the incentives are rights, stakeholders will be inspired to participate and make sustainable decisions.
- There is no single approach to allocations, and all solutions need to be local and case specific, be they based on output shares (such as ITQs, cooperatives, community allocations or state auctions), space (such as territorial fishing rights, recreational and commercial fishing reserves, marine protected areas) or even time – and all tools need to be applied when appropriate.

Prof. Hilborn noted that if incentives are the number one issue, other issues to recognize include governance, data, and the role of government. Moreover, when output controls don't work, spatial allocation may be successful - although it does not necessarily address the issue of stopping the race for fish, nor will it resolve the implicit allocation issues related to marine protected areas.

In looking forward, it was noted that one issue that was not discussed broadly during the conference was the issue of who would pay for the high transition costs of moving from traditional management to the new consensus – particularly given that, without firm rights and clear allocations, there is little incentive to rebuild or facilitate the transition. Another little discussed issue involved the allocation between different fleets on different species that may reflect ecosystem interactions between different groups of species, noting that economic analysis suggests that rebuilding one species (e.g. groundfish) may decrease the economic value of the yield of another (e.g. invertebrates). Thus, another new challenge would be the one of how to allocate within ecosystems.

In touching upon some of the main themes of the conference, it was noted that, in terms of allocation rules, there seems to be a broad pragmatic consensus that historical shares are one of the usual way to proceed, with grandfathering of participants and then making a transition to other more equitable mechanisms. In terms of international fisheries, it was noted that most are plagued by poor governance and a lack of rights and, until there is a new governance paradigm in place, the situation will not likely improve. Finally, in looking to the topic of intersectoral transfers, he noted that these may occur between the recreational and commercial sectors and from fishing companies to communities (native/indigenous or otherwise). Despite the fact that community-based fisheries were not strongly represented in the conference, Prof. Hilborn noted that these are extremely important in fisheries governance.

How to go forward?

In terms of areas for research, Prof. Hilborn called for the systematic exploration of alternative governance models and legislative alternatives; consideration of mixed spatial and output control regimes, teaming up with the lessons learned from community-based regimes; further integrating governance with biology; and, developing models of individuals' behaviour in alternative management regimes. In terms of publications, there is a critical need to share the lessons learned in other fisheries. Finally, in looking forward at topics for future conferences and workshops, he noted that there is a need to look beyond the restricted set of fisheries experiences described during the conference and to look at the topics of international governance, recreational fisheries governance, spatial allocation, options for artisanal fisheries, and events to bring managers and stakeholders together to expose all to lessons learned elsewhere.

As he closed, Prof. Hilborn reminded all that we need to remember that there are millions of people out there who depend on getting fisheries management "right" and that we had lots of work still to do in learning how to better manage sharing the fish.

CLOSE OF CONFERENCE

Mr Rogers delivered the closing thoughts for the conference on behalf of the Minister of Fisheries, The Hon. Jon Ford JP MLC.

I acknowledge the Noongar people and thank them for allowing us to meet on their land. Good afternoon.

It is my pleasure to be here at the final stages of this important conference to make some closing remarks. I commend you all for your contributions to the conference and your stamina. What's more, you don't look much worse for wear than when the Minister opened the conference on Monday morning. I will endeavour to be brief to enable our visitors to WA to discover the joys of Fremantle outside of this conference room.

Considering your interest in attending this conference, either as speakers or delegates, I don't need to convince you of the importance of allocating fisheries resources, whether at the local, national or international levels. During the presentations and panel sessions, you have listened to calls to change, calls to move away from protecting historical patterns of use except where they benefit fish and their ecosystems, even calls to limit technology which is detrimental to sustainable fishing practices. We know that the world's fisheries are facing serious challenges, with many fish stocks being overfished and fish stocks in some cases in a depleted state.

The aim of this conference has been to focus on how to ensure the sustainability of fisheries by addressing the key issue of resource allocation. That may seem a lot to ask, but the fundamental question that had to be addressed during the past four days has been, "How may fisheries managers and policy-makers go about considering, undertaking and implementing the allocation of fish resources to ensure their sustainability at local, national, international or regional levels.

I have been buoyed and, indeed so have the Australian fisheries management present, by reference to Australia as one of the countries leading the way in the development of innovative and sustainable practices to protect the fish. New Zealand, Iceland, Canada, the United States and many others in their own spheres are leading the way.

We have had a number of speakers at the conference outlining other approaches to resource allocation. These had to take into account local circumstances - legal, cultural and historical – but most have the same goal: the sharing and sustainable management of our limited fish resources. Those delegates who came to this conference seeking the perfect model or solution to resource sharing may be disheartened. However, I think from the range of experiences discussed at this conference from delegates from the world highlights that there is no “one size fits all” solution. Each country, jurisdiction and fishery has its own economic, social and environmental characteristics, and that demands a flexible approach.

The outcomes of this conference have shown that protecting fisheries and allocating fish resources are complex issues that require constant review from overarching agreements at international and regional levels through to national approaches and local area management. It has been pointed out many times that fisheries managers, particularly in government, can be constrained in their ability to reallocate catches between sectors, but this conference has shown that the wider responsibility of managing fish should remain with governments as long as they continue to employ and develop clear and comprehensive policy and administrative frameworks. Within these frameworks, there is then scope for local application of policy, be it through traditional cultural networks, as in some Pacific nations, or through the private sector as in New Zealand.

As the Executive Director of the Department of Fisheries in Western Australia, I know only too well the pressures of my counterparts in other states and the Australian Government to control fishing effort through restrictions on fishing time, place and gear. However, unless there is a clear policy framework for that application, then we could fail even to sustain the fish stocks or the communities that rely on them.

I know the West Australian Minister for Fisheries is very keen to see the commercial fishing industry, recreational fisheries, charter operators and customary fishers working together on allocation and resource sharing issues. I remain convinced that fostering relationships and dialog between these groups remain the key to resolving allocation issues. I can see, however, that as much as we are able to resolve resource sharing issues in our own countries, there is a worry that uncontrolled high seas fishing and illegal foreign fishing incursions into exclusive economic zones will push the sustainability of wild catch fisheries in many countries to the limit. It is a critical issue. I remain convinced that these problems are not insurmountable as long as governments and the users of fisheries resources recognize their mutual goal of long term sustainability and work together to overcome them.

This conference has been an excellent opportunity for members of the fishing industry, other sectors, and fisheries managers from across the globe to share ideas on how to best share the harvest from their fish resources. I trust that it has been a wonderful experience for you all, and that when you return home you will build on the momentum gathered here at this conference. It is, after all, your collective leadership which is needed to address ongoing fisheries sustainability through resource allocation. You have a responsibility to provide that leadership.

When the Minister addressed you on Monday, he said you had a great amount of work ahead of you until the conference concluded today. There is now much more to do, with greater clarity. I will finish this address by saying that you still have a lot of work ahead of you in sharing the fish and in developing and maintaining sustainable fisheries worldwide. In terms of this conference, I will certainly be encouraging the Department of Fisheries in five years time to have another conference of this type

because I still think there is huge benefit in sharing our knowledge and our experience in terms of moving forward on fisheries management issues.

My thanks go to all the organizations and government agencies who generously sponsored the Sharing the Fish '06 Conference, to the keynote and invited speakers, to all the presenters and delegates, and to the hard work of the Conference Organizing Committee without whom this symposium would not have eventuated.

May you have a safe journey home. And, those who are staying a while from other states or overseas, enjoy West Australia's hospitality.

On behalf of the West Australian Minister for Fisheries I now officially declare the Sharing the Fish '06 Conference closed.

Conference programme

Sunday, 26 February 2006

WELCOME RECEPTION, WESTERN AUSTRALIAN MARITIME MUSEUM

Sponsored by M. G. Kailis Group, Fremantle, Western Australia

Monday, 27 February 2006

| Time | Session |
|----------------|---|
| 8.30 TO 10.30 | <p>WELCOMES AND WELCOME ADDRESSES</p> <p>CHAIR – PETER MILLINGTON, DEPARTMENT OF FISHERIES WESTERN AUSTRALIA</p> <ul style="list-style-type: none"> • Ken Colbung – Noongar Elder, Indigenous Welcome • Peter Millington – Department of Fisheries Western Australia The use of fisheries adjustment schemes to achieve shifts in resource allocations in estuaries and embayments in Western Australia • Sen. the Hon Ian Macdonald – Minister for Fisheries, Forestry & Conservation, Australian Government • Dr John Glaister – New Zealand Ministry of Fisheries representing Hon. David Benson-Pope, Minister of Fisheries, New Zealand • Ichiro Nomura – Food and Agriculture Organization of the United Nations <p>Official opening</p> <ul style="list-style-type: none"> • Hon Jon Ford JP MLC – Minister for Fisheries for the Kimberley, Pilbara and Gascoyne <p>Keynote – Prof Jon Van Dyke – Professor of Law, William S. Richardson School of Law University of Hawaii, United States Allocating fish across jurisdictions</p> |
| 11.00 TO 13.00 | <p>THEME 1 ALLOCATIONS ACROSS JURISDICTIONS – INVITED SPEAKERS</p> <p>CHAIR – PETER MILLINGTON, DEPARTMENT OF FISHERIES WESTERN AUSTRALIA</p> <p>Prof Gordon Munro – Professor Emeritus, Department of Economics and the Fisheries Centre University of British Columbia, Canada International allocation issues and the high seas: An economist's perspective</p> <p>Prof. Rosemary Rayfuse – Associate Professor and Director of International Law Programs, Faculty of Law University of New South Wales, Australia Regional allocation issues or Zen and the art of pie cutting</p> <p>Dr Wendy Craik – Chief Executive, Murray-Darling Basin Commission, Australia Allocation issues in fisheries management</p> <p>Panel discussion</p> |

ALLOCATIONS ACROSS JURISDICTIONS: CONCURRENT SESSIONS (14.00 TO 15.30)

| | HIGH AEAS ALLOCATION ISSUES | REGIONAL ALLOCATION ISSUES | NATIONAL ALLOCATION ISSUES |
|------------|---|---|---|
| RAPPORTEUR | NEIL THOMPSON | LEN RODWELL | RICHARD SISSON |
| CHAIR | JOHN VAN DYKE | ROSEMARY RAYFUSE | PETER APPLEFORD |
| | Jonathon Peacey High Seas Fisheries Governance: A Framework for the Future? | Transform Aqorau Moving Towards a Rights Based Fisheries Management Regime for the Tuna Fisheries in the Western and Central Pacific Ocean | Ewan Colquhoun A Practitioner's View – Negotiation of Resource Sharing in Australia's Western Tuna And Billfish Fishery |
| | Quentin Hanich Exclusive Economic Zones and Pacific Developing Island States: Who Really Gets All The Fish? | Greg Peacock Bilateral Management of Transboundary Fish Stocks: An Informal Approach to Ecosystem Based Management | Elizabeth Foster Resource Sharing in Australia's Tuna and Billfish Fisheries |
| | Glenn Joseph The Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery: Management Scheme (Vessel Day Scheme) | Nienke Van Der Burgt The Role of Fisheries Agreements in Promoting Equity Within Resource Allocation | Lindsay Joll The Inter-Sectoral Resource Sharing Process for Tuna and Tuna-Like Species in Western Australia – The WA Perspective |
| | Hannah Parris Getting More Out of The Western and Central Pacific Ocean Tuna Convention: Current Arrangements and Future Dilemmas | Anna Willock Conservation Implications of Allocation Under Regional Fisheries Management Organisations, with a Focus on the Western and Central Pacific Fisheries Commission | Alistair McIlgorm Sharing The Ocean With an Endangered Species: The Case: Of the Humpback Dolphin Western Taiwan |
| | Christopher Reid Economic Implications of an Implicit Allocation of Bigeye Harvest Rights Through and Across the Board Reduction in Effort Levels in the Western and Central Pacific Tuna Fishery | Michael Odhiambo Fish Do Not Know The Borders: Policy and Legal Issues in Allocation of Fisheries In Lake Victoria | Warwick Gullett Up the Creek and Out at Sea: The Resurfacing of the Public Right to Fish |
| | Panel Discussion | Panel Discussion | Panel Discussion |

ALLOCATIONS ACROSS JURISDICTIONS: CONCURRENT SESSIONS (16.00 TO 17.15)

| | HIGH SEAS ALLOCATION ISSUES | REGIONAL ALLOCATION ISSUES | NATIONAL ALLOCATION ISSUES |
|------------|---|--|--|
| RAPPORTEUR | NEIL THOMPSON | LEN RODWELL | BRITT MAXWELL |
| CHAIR | JON VAN DYKE | ROSEMARY RAYFUSE | WILL ZACHARIN |
| | Kate Sanderson Sharing the Fish in the North Atlantic – A Faroese Perspec- tive | Richard Ogutu-Ohwayo Management of Shared Fisher- ies Resources: Lessons From Lake Victoria (East Africa) | Kelly Crosthwaite Native Title Claims Out of the Courts: Establishing a Framework for Allocating and Managing Indigenous Cul- tural Fishing Access in South Australia |
| | Frank Alcock Slicing Pies: A Political Science Perspective on Distributive Issues in the Law of the Sea Treaty and the UN Fish Stocks Agreement | Darren Dennis Research to Support Allocation of Indigenous and Commercial Catch in the Torres Strait Tropical Rock Lobster <i>Panulirus ornatus</i> Fishery | Virginia Leek South Australia's ILUA Process – An Approach to Allocation |

ALLOCATIONS ACROSS JURISDICTIONS: CONCURRENT SESSIONS (16.00 TO 17.15)

| HIGH SEAS ALLOCATION ISSUES | REGIONAL ALLOCATION ISSUES | NATIONAL ALLOCATION ISSUES |
|---|--|---|
| Andrew Serdy Trading of Fisheries Commission Quota Among States – Does International Law Allow It? | Yimin Ye Transboundary Distribution and Sharing of the Torres Strait Rock Lobster Fishery Between Australia and Papua New Guinea | Parry Agius Sharing the Process: Statewide Indigenous Land Use Agreement Negotiations in South Australia |
| Lyn Goldsworthy Governance Arrangements to Save the Resources of our Deep Seas for Current and Future Generations | Panel Discussion | Neil McDonald South Australia's ILUA Process – An Approach to Allocation |
| Panel Discussion | | John Christophersen The Future of Fish Allocation in the Waters of the Northern Territory – An Aboriginal Perspective |
| | | Panel Discussion |

Thursday, 28 February 2006

| Time | Session |
|----------------|---|
| 8.30 to 10.00 | RECAP OF ALLOCATIONS ACROSS JURISDICTIONS THEME 2 KEYNOTE: ALLOCATION ACROSS SECTORS |
| | CHAIR – ICHIRO NOMURA, FAO |
| | <ul style="list-style-type: none"> • Neil Thomson – High seas allocation issues • Len Rodwell – Regional allocation issues • Richard Sisson – National Allocation Issues • Britt Maxwell – Australian Indigenous Allocation Issues-SA and NT Perspective • Ichiro Nomura Food and Agriculture Organization of the United Nations |
| | Official opening |
| | <ul style="list-style-type: none"> • Hon Jon Ford JP MLC – Minister for Fisheries for the Kimberley, Pilbara and Gascoyne |
| | Keynote – Prof Peter Pearse – Professor Emeritus, Economics and Forestry University of British Columbia, Canada Allocations of catches among fishing sectors: Directions for Policy Development |
| 10.30 to 12.30 | THEME 2 ALLOCATIONS ACROSS SECTORS – INVITED SPEAKERS |
| | CHAIR – ICHIRO NOMURA, FAO |
| | Mr Alistair Graham – Director of Nature Conservation Programs, Tasmania Conservation Trust, Australia Extractive and Non-Extractive Allocation Issues – An Environmental Perspective |
| | Dr Peter Rogers – Executive Director, Department of Fisheries Western Australia, Australia Resource Sharing – Key to Sustainability |
| | Dr Mahfuzuddin Ahmed – Principal Social Scientist and Director for Policy, Economics and Social Science, World Fish Center, Malaysia Allocation Issues in Marine Environment – Managing Conflicts Between Commercial, Artisanal and Tourism in Tropical Fisheries |
| | Panel discussion |

ALLOCATIONS ACROSS SECTORS: CONCURRENT SESSIONS (13.30 TO 15.00)

| | SPATIAL/TEMPORAL ALLOCATION ISSUES | EXTRACTIVE/ NON-EXTRACTIVE SECTOR ISSUES | ALLOCATION BETWEEN COMMERCIAL AND RECREATIONAL |
|------------|--|---|--|
| RAPPORTEUR | TRANSFORM AQORAU | ANDREW HILL | MARK PAGANO |
| CHAIR | STEVE DUNN | ANDREW READ | BILL FLAHERTY |
| | Alistair McIlgorm Lessons From Inter-Sectoral Fishing Access Re-Allocation in New South Wales | Carli Bertrand Management of Shared Fisheries Resources: Improving the MPA Tool for Sustainable Allocation Marine Resources in U.S. Fisheries Management | Frank Prokop Can Integrated Fisheries Management Work Without Recreational Fishing Property Rights? |
| | Tracey MacDonald Protected Commercial Fishing Areas (PCFAs) – A Strategy for Ensuring Equity in Resource Allocation between Aquatic Resource Users | Zena Dinesen Fishing and Marine Protected Areas – How Can We Best Share the Fish to Meet Fisheries and Conservation Objectives? | Steve Halley Models for Allocation of Fisheries Resources Between Sectors |
| | Bryan Van Der Walt Recreational Fishing Havens: Promoting Harmony between Recreational and Commercial Fishers? | Noel Taylor-Moore Great Barrier Grief: A Case Study of the Socio-Economic Impacts of the Representative Areas Program for the Great Barrier Reef Marine Park on the Queensland Seafood Industry | Nici Biggs Implications of Reallocation: Case Examples from New Zealand |
| | Steven Shanks Allocation to Manage Spatial Fishing Effort across the South Australian Pilchard Fishery | Vicki Mavrakis 1 + 1 = 3 Beyond Aquatic Reserves | William Zacharin Maintaining Allocation Shares in Addressing Stock Sustainability: A Case Study in a Multispecies Fishery in South Australia |
| | Howel Williams A Clean Slate? Sharing the Return of the Tasmanian Scallop Fishery | Rick Fletcher Sharing the Fish, and Other Resource Access Issues: How Could This be Done at a Regional Level? | Ronald Mitchell A Comparison of the Management of Red Sea Bream (<i>Pagrus major</i>) in Sagami Bay (Japan) and the Related Pink Snapper (<i>Pagrus Auratus</i>) in Shark Bay (Western Australia) |
| | Panel Discussion | Panel Discussion | Panel Discussion |

ALLOCATIONS ACROSS SECTORS: CONCURRENT SESSIONS (15.30 TO 17.00)

| | SPATIAL/TEMPORAL ALLOCATION ISSUES | EXTRACTIVE/ NON-EXTRACTIVE SECTOR ISSUES | ALLOCATION BETWEEN COMMERCIAL AND RECREATIONAL | COMMERCIAL MANAGEMENT ISSUES (THEME 3) |
|------------|--|--|---|---|
| RAPPORTEUR | TRANSFORM AQORAU | ANDREW HILL | MARK PAGANO | GRAEME MCGREGOR |
| CHAIR | STEVE DUNN | ANDREW READ | BILL FLAHERTY | PETER MILLINGTON |
| | Dorthea Huber Areas of Limited Gear Restrictions in the East Coast Trawl Fishery – A Case of Sensible Resource Sharing or the Reallocation of Fishing Rights? | Heather Brayford Spatial Allocation of Coastal Waters for Aquaculture Development – The Western Australian Experience | Stephanie Madsen Designing Dedicated Access Privilege Programs: Alternative Approaches to Balancing Benefits Among Harvesters, Processors, and Communities in North Pacific Fisheries | Tony Craig Growing Pains in the Quota Management System |

ALLOCATIONS ACROSS SECTORS: CONCURRENT SESSIONS (15.30 TO 17.00)

| SPATIAL/TEMPORAL ALLOCATION ISSUES | EXTRACTIVE/ NON-EXTRACTIVE SECTOR ISSUES | ALLOCATION BETWEEN COMMERCIAL AND RECREATIONAL | COMMERCIAL MANAGEMENT ISSUES (THEME 3) |
|--|--|---|--|
| Leigh Mitchell Multi-Sector Fisheries in New Zealand – Case Studies in Sector Engagement | Panel Discussion | Greg Paust The Implementation of Integrated Fisheries Management in Western Australia | Daryl Sykes The World is Full of Good Intentions: Achieving the Full Potential of Property Rights-Based Management, or Not |
| Panel Discussion | | Panel Discussion | Panel Discussion |

Wednesday, 1 March 2006

| Time | Session |
|----------------|--|
| 8.30 to 10.00 | RECAP OF ALLOCATIONS ACROSS SECTORS THEME 3 KEYNOTE: ALLOCATION WITHIN SECTORS |
| | CHAIR – JOHN GLAISTER, NEW ZEALAND MINISTRY OF FISHERIES |
| | <ul style="list-style-type: none"> • Transform Aqorau - Spatial / Temporal Allocation Issues • Andrew Hill - Extractive / Non-extractive Sector Issues • Mark Pagano - Allocation between Commercial and Recreational Sectors • Graeme McGregor - Commercial Management Issues |
| | Keynote - Prof Gary Libecap - Anheuser Busch Professor and Professor of Economics and Law, University of Arizona, United States Allocation Within Sectors: Assigning Property Rights in the Common Pool. Implications of the Prevalence of First Possession Rules |
| 10.30 to 13.00 | THEME 3 ALLOCATIONS WITHIN SECTORS – INVITED SPEAKERS |
| | CHAIR – JOHN GLAISTER, NEW ZEALAND MINISTRY OF FISHERIES |
| | Ms Alison Thom – Deputy Secretary Relationship and Information, Wāhanga, Te Puni Kōkiri, New Zealand Customary/Indigenous Allocation Issues |
| | Dr Pablo Vigliano – Senior Scientist and Adjunct Professor Department of Biology, National University of Comahue, Argentina Allocation Policies and its Implications for Recreational Fisheries Management in Inland Waters of Argentina |
| | Prof Ragnar Arnason – Professor Fisheries Economics and Chairman Institute of Economic Studies University of Iceland, Iceland Commercial Allocation Issues |
| | Ms Chandrika Sharma – Executive Secretary, International Collective in Support of Fish Workers (ICSF), India Allocation of Fisheries Resources: A Small-Scale Fisheries Perspective |
| | Panel discussion |

ALLOCATIONS WITHIN SECTORS: CONCURRENT SESSIONS (13.30 TO 15.30)

| | COMMERCIAL ALLOCATION ISSUES – SECTOR ALLOCATION MANAGEMENT | RECREATIONAL ISSUES | INDIGENOUS, RECREATIONAL AND COMMERCIAL ALLOCATION ISSUES |
|------------|--|---|---|
| RAPPORTEUR | AMANDA HAMILTON | ANTONY LEWIS | RICK FLETCHER |
| CHAIR | DAVID CARTER | FRANK PROKOP | FELETI TEO |
| | Vilhjalmur Egilsson Icelandic Fisheries Legislation | Philip Kirk New Zealand's Recreational Fishing Sector – Structure, Governance, and Participation in the Allocation Process | Terry Lynch Governance Arrangements for the Management and Use of Indigenous Communities Common Property |
| | Soile Kulmala Sharing the Baltic Salmon | Keith Ingram The Right to Fish for Food or Fun | Tania McPherson The 'Race For Space': Maintaining the Value of Fisheries Rights Allocated to Maori as Part of Treaty Settlements in New Zealand |
| | Gordon Gislason Allocation Within Commercial Fisheries in Canada: Pacific Herring, Salmon, and Groundfish | Andrew Cribb Managing Recreational Fishing Take Within a Sustainable Harvest and Allocation | Guy Wright National Principles for Defining Customary Fishing can Assist in the Recognition of the Customary Sector in Australia |
| | Kristy Saville The Evolution of Commercial Fishery Allocation Processes in Western Australia | Rae Burrows Stakeholder Involvement in the Allocation | Ben Fraser Allocating Fish Resources to Indigenous Western Australians |
| | Jeremy Prince Sustainability Requires Change to Allocated Property Rights: The Story of Abalone | Bernard Walrut Sharing the Fish – Whose Fish? | Panel Discussion |
| | Panel Discussion | Panel Discussion | |

ALLOCATIONS WITHIN SECTORS: CONCURRENT SESSIONS (16.00 TO 17.30)

| | COMMERCIAL ALLOCATION ISSUES – SECTOR ALLOCATION MANAGEMENT | APPROACHES TO THE ALLOCATION PROBLEM | RE-ALLOCATING RESOURCES BETWEEN FISHING SECTORS IN TORRES STRAIT COMMERCIAL FISHERIES |
|------------|--|--|--|
| RAPPORTEUR | HEATHER BRAYFORD | JO MCCREA | GUY WRIGHT |
| CHAIR | DAVID CARTER | MARK EDWARDS | JOHN CATLIN |
| | Moenieba Isaacs Has the Reallocation of Fishing Rights Contributed to Wealth Redistribution and Poverty Alleviation in South Africa? | Paul McLeod Socially Optimal Allocation of Fish Resources Among Competing Uses, a Dynamic Allocation Model Applied to Western Australia's Abalone and Wetline Fisheries | Barre Kare Management Arrangements on Shared Fisheries Stocks in the Torres Strait Protected Zone Between Australia and Papua New Guinea |
| | Derek Johnson Social Justice and Fisheries Governance: The View From India | Dan Gaughan Meeting the Data Requirements for Integrated Fisheries Management: Progress Towards Minimising the Costs of Monitoring | Dave Johnson History of Management Arrangements and Stakeholders Involved in Torres Strait Fisheries |
| | Frank Alcock Property Rights and Equity in Fisheries Management: The Significance of Vertical Integration | Robin Connor Necessary but not Sufficient: Allocation of Allowable Catch as a Management Tool in Shared Fisheries | John Kung Recent Decisions: The Protected Zone Joint Authority |

ALLOCATIONS WITHIN SECTORS: CONCURRENT SESSIONS (16.00 TO 17.30)

| COMMERCIAL ALLOCATION ISSUES – SECTOR ALLOCATION MANAGEMENT | APPROACHES TO THE ALLOCATION PROBLEM | RE-ALLOCATING RESOURCES BETWEEN FISHING SECTORS IN TORRES STRAIT COMMERCIAL FISHERIES |
|--|---|---|
| Jodie Little Quantifying Tradeoffs Between Ecology, Economy and Climate in the Northern California Current Ecosystem | Julia Pickworth Changes in Australian Fisheries: What can Social Impact Assessment Tell us? | Britt Maxwell The Role of Allocation Advisory Panels and Tenders in Implementing PZJA Resource Reallocation Decisions |
| Hilary Revill The Journey Towards an Explicit Resource Sharing Arrangement for the Tasmanian Rock Lobster Fishery | Peter Millington A Case Study on the use of Fisheries Adjustment Schemes to Achieve Shifts in Resource Allocations in Estuaries and Embayments in Western Australia | James Fogarty Commercial Sectoral Views on Long Term Implementation of PZJA Resource Reallocation Decisions |
| Panel Discussion | Panel Discussion | Panel Discussion |

Thursday, 2 March 2006

| Time | Session |
|----------------|--|
| 9.00 to 10.30 | RECAP OF ALLOCATIONS ACROSS SECTORS KEYNOTE PANEL DISCUSSION CHAIR – PETER ROGERS, DEPARTMENT OF FISHERIES WESTERN AUSTRALIA <ul style="list-style-type: none"> • Amanda Hamilton – Commercial Allocation Issues: Sector Allocation Management • Rick Fletcher - Commercial Allocation Issues: Allocation and Reallocation Processes • Antony Lewis - Recreational Allocation Issues • Heather Brayford –Indigenous, Recreational and Commercial Allocation Issues • Jo McCrea - Approaches to the Allocation Problem • Guy Wright – Re-allocating Resources between Fishing Sectors in Torres Strait Commercial Fisheries Keynote Panel Discussion: Prof. Gary Libecap, Prof. Peter Pearse, Prof. Jon Van Dyke |
| 11.00 to 12.30 | WHOLE OF CONFERENCE OVERVIEW <ul style="list-style-type: none"> • Prof. Susan Hanna – Professor of Marine Economics, Oregon State University, United States • Prof Ray Hilborn - Richard C. and Lois M. Worthington Professor of Fisheries Management in the School of Aquatic and Fishery Sciences, University of Washington United States |
| 12.30 | CLOSING ADDRESS Hon Jon Ford J.P. MLC – Minister for Local Government and Regional Development; Fisheries; the Kimberley, Pilbara and Gascoyne |

AUSTRALIAN FOCUS SESSION (14.00 – 15.00)**ISSUES AND SOLUTIONS FOR RESOURCE SHARING IN AUSTRALIA***Sponsored by the Australian Government Fisheries Research and Development Corporation*

Nick Rayns, Chair

| | |
|---|--|
| Nick Rayns – Executive Manager, Australian Fisheries Management Authority, Australia | Introduction |
| Russell James – Department of Agriculture, Fisheries & Forestry, Australia | Coolangatta to now – where did it go? |
| Geoff Diver – Diversity, Australia | Well, It Looked Good on Paper – The Transition From Theory to Practice for Resource Sharing in the Western Tuna and Billfish Fishery |
| Ian Stagles – Western Angler Magazine Australia | Resource Sharing – Why We Are Getting It So Wrong? |
| Guy Leyland – Executive Officer, Western Australian Fishing Industry Council, Australia | An Overview of Resource Allocation Issues in Western Australia |
| Frank Prokop – Executive Director, Recfishwest, Australia | |
| Doug Bathgate – West Australian Recreational Fishing Advisory Council, Australia | Shark Bay (Inner Gulf) Stock Sustainability: a Negotiation Experience |
| James Fogarty – Manager Queensland Operations, MG Kailis Group Australia | Resource Allocation Issues for the Commercial and Recreational Sectors Arising from the Recent GBRMPA Planning Decisions |
| Alistair McIlgorm – Director, National Marine Science Centre, Australia | An Overview of Resource Allocation Issues in NSW Estuaries |
| Peter Appleford – Director, Fisheries, Department of Primary Industries Victoria, Australia | An Overview of the Victorian Resource Allocation Policy, and Social and Economic Valuation Issues in Bay and Inlet Fisheries |
| General Discussion | |
| John Wilson – Fisheries Research and Development Corporation, Australia | Summary & Overview |
| Nick Rayns – Executive Manager, Australian Fisheries Management Authority, Australia | Closing Remarks |
| CONFERENCE DINNER | |
| <i>Sponsored by the Western Australian Fishing Industry Council</i> | |

Welcome addresses

The use of fisheries adjustment schemes to achieve shifts in resource allocations in estuaries and embayments in Western Australia

Peter Millington

Conference Chair

Director of Fisheries Management Services

Department of Fisheries Western Australia

Perth, Western Australia, Australia

ABSTRACT

Since 1988, a series of voluntary fisheries adjustment schemes have focused on estuarine and embayment fisheries, in areas of population growth and coastal development in Western Australia where recreational and commercial fishers compete for the limited fish resources available. The underlying assumption is that reductions in commercial catch increase the available recreational catch. The open-ended nature of recreational fisheries can mean any benefits are absorbed by this sector, but with little apparent benefit to the individual fisher. However, the opportunity cost of not having permanent effort reduction programs needs to be considered. Significant reductions in the number of commercial licences and catches have occurred in Western Australian fisheries where schemes have been introduced, increasing the potential catches for the recreational sector. Quantifying the extent of resource shifts is difficult because of the lack of empirical recreational catch data. Perception issues can dominate the resource sharing debate. Should priority be given to measuring resource shifts, or should the scarce resources available be dedicated to achieving further effort reductions? A new initiative, integrated fisheries management, will allocate explicit catch shares in certain fisheries over the next decade. However, the benefits of targeted schemes as an adjunct to achieve implicit resource reallocation over time cannot be understated.

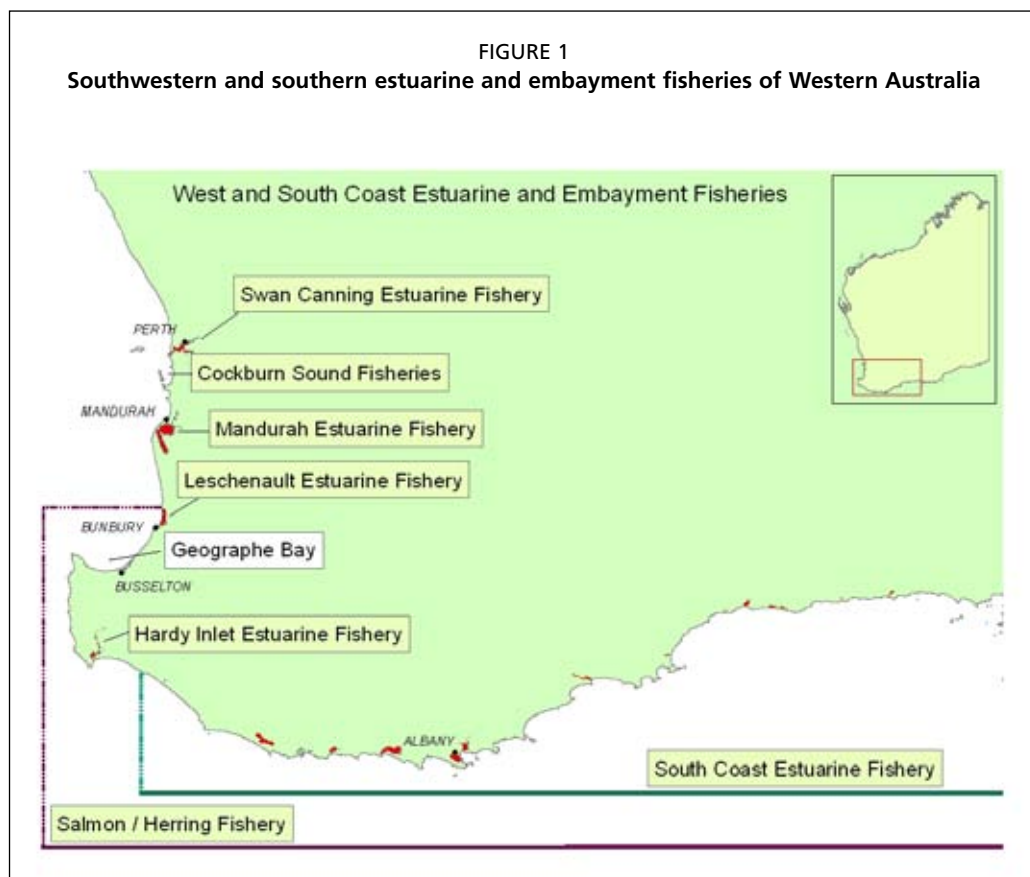
1. INTRODUCTION

The temperate waters of Western Australia support only small stocks of fish by world standards. In the absence of major river systems enriching the continental shelf, no major upwellings and with the warm Leeuwin Current running south from nutrient poor tropical waters, nutrients to support major fish stocks are absent. The river systems that do exist are low volume, intermittent and form only small (and often barred) estuaries. The nature of the coastline provides limited protection from the prevailing fetch of the Indian Ocean, except where sheltered by an extensive offshore limestone reef system, and there are only a limited number of embayments and natural harbours. This feature of Western Australia's marine ecology was recognized early in the management of its fish stocks with the then Superintendent of Fisheries saying in 1953:

“...I do not for a moment suggest that Western Australia’s fishery resources are unlimited. In contradistinction to other parts of the world, nature was somewhat niggardly when she endowed our fisheries. We certainly have many species of fish, but we have a smallish number of individuals of each species and these could possibly, without proper management, in the long run become depleted. It is essential therefore that we take very good care of what we have.” (Fraser, 1953, p 19)

This recognition resulted in the early introduction of very conservative commercial fisheries management regimes in Western Australia (Brayford and Lyon, 1995). This included the adoption of limited entry as a major underpinning of commercial fisheries management (from the 1960s), especially in the major western rock lobster (*Panulirus cygnus*) fishery and the bigger prawn (shrimp) fisheries. Restricted entry regimes with limited transferability were also introduced into the major estuarine and embayment (finfish and crab) fisheries at the same time (Millington, 1998).

The major commercial estuarine and embayment fisheries in Western Australia are located in the southern half of the state, from Perth to the south coast. These include the Cockburn Sound fisheries, and the Swan Canning, Mandurah, Leschenault, Hardy and South Coast Estuarine fisheries (Figure 1). These are primarily net fisheries that target a range of estuarine species such as bream (*Acanthopagrus butcheri*), pink snapper (*Pagrus auratus*), mullet (*Mugilidae*) and crabs (*Portunus pelagicus*). In addition, there are several beach seine fisheries in the embayments targeting Australian salmon (*Arripis truttaceus*), Australian herring (*A. georgianus*), and whitebait (*Hyperlophus vittatus*). Recreational fishing occurs in a relatively unfettered manner on almost all these species in the same waters as the commercial fisheries. These are mostly undertaken through angling from shore or small boats, with a limited amount of (attended) recreational gill netting



2. CAUSES OF CONFLICT

2.1 The limited resource and environmental pressures

Extensive shallow sea-grasses in embayments in Western Australia supplement the estuaries in providing nursery grounds for a wide range of species, including those of interest to commercial and recreational fishers. Many adults are seasonally available as they move inshore to breed and can give a false impression of abundance but the abundance of these species is limited. Furthermore, although the embayments are currently in good ecological condition, both estuaries and embayments are under stress from development pressures, eutrophication and reduced flushing caused by withdrawals of freshwater upstream. In addition, recruitment of many species is affected by the Leeuwin Current, which in turn is driven by El Niño-La Niña oceanographic effects.

2.2 The demographic pressures

Commercial fishers in the estuaries and embayments of Western Australia are often 3rd or 4th generation fishers. Historically they lived in small coastal towns and communities, with relatively poor transport. Conflict with recreational fishers has been intermittent over the last century, and was reported as early as the 1904 Annual Report of Chief Inspector of Fisheries (Gale, 1905; p. 4). However these conflicts were, until the late 1970s, at relatively low levels, surfacing primarily at peak holiday times and often solved by small, local, spatial and temporal closures for commercial fishers.

Over 80% of the Western Australia's population lives within 30km of the coast (WAPC 2003), predominantly in the southwest. Population growth in the southwest over the last three decades has been significant, including the development of many recreational boat ramps and marinas. Recreational boat ownership is large, with 68,493 power boats registered in a population of 1.925 million (in 2001), the vast majority of who live in the Perth metropolitan region, the southwest and the south. Ownership of recreational boats is very high (average 3.6%), and even higher in the non-metropolitan regions (up to 4.5% in the southwest). Recent population growth has been matched by an increasing participation rate in recreational fishing. Recreational fishers have been between 30 and 35% of the population over the last seven years (Department of Fisheries 2005a; p 125). The median number of fishing days is about 10, with the majority fishing about 5 days. The southwest and south of the state are key areas for recreational fishers. There is significant overlap between areas favoured by recreational fishers and the commercial estuarine and embayment fisheries.

2.3 Resource exploitation pressures

A variety of measures have constrained commercial fishing effort, including limited entry, a personalized licensing system, and, historically, a restriction of transfer of such licences to family members. These macro measures have been reinforced by gear limitation (size of boats, net mesh size and length), temporal restrictions (seasonal, weekend and day fishing closures) and area closures. These measures have had a range of drivers, including effort limitation, breeding stock protection and, in some cases, spatial and temporal separation from the mostly seasonal and/or weekend recreational fishing community. While recreational licensing regimes for certain high value species have been in place for decades, no general marine or estuarine angling licence is required. There is no political will to introduce such a licence (e.g. Labor Party 2004). While there have been progressive limitations to gill and haul netting, and there are stringent and comprehensive possession, bag and size limits in place, there is effectively no cap on recreational fishing effort. The commercial fishing sector has a wider range of available species than the recreational anglers, due to the types of permitted fishing gear (gillnets etc.). There are inevitably overlaps between sectors on key species, predominantly pink snapper, black bream, Australian salmon and herring.

2.4 The perception issues

The resource sharing debate is dominated by the perception that commercial fishing reduces the availability of fish for the recreational sector, but there is often little evidence to support these perceptions. For example, there has been a tendency for the recreational sector to blame commercial fishing for a lack of Australian salmon caught by recreational fishers. However, as indicated above, recruitment and availability of salmon are predominately driven by environmental factors, such as water temperature and strength of the Leeuwin Current. Stock sustainability is not a concern but conflicts continue to occur through the perceived lack of fish. Perception issues among the recreational fishing community about commercial fishing in estuaries and embayments fall into three categories:

Firstly, 'fishing is not like it was'. This is an implicit recognition that as fishing pressure has increased the average size of fish caught has decreased. This is expected as unexploited populations are increasingly targeted, although the abundance of smaller individuals may rise.

Secondly, this depletion phenomenon is in most instances attributed to commercial fishers, rather than the rising number of recreational fishers.

Thirdly, there is competition for space. Most estuaries are small and commercial fishing activity, if carried out during the day, is starkly evident. There are also safety and aesthetic issues for the commercial beach fishers as they use four-wheel drive vehicles to haul dinghies along increasingly crowded beaches.

2.5 Relative value of the activities

Commercial fishers consider they have an historic right to continued access to the estuarine and embayment fisheries, although their common law right of access has been progressively fettered by statute law over the last 150 years (Department of Fisheries 2005b). The recreational position is that, given the low commercial value of species in estuaries and embayments, commercial exploitation is not the best economic or social return for the resource; the best return to the community can be achieved through shifting the available catch to recreational fishers, e.g. in the salmon/herring fisheries.

3. THE INDUSTRY ADJUSTMENT PROCESSES

In 1983, government froze the entry of any further commercial fishing boats into the Western Australian fishing fleet. This effectively stopped further entry into those remaining (lower value) commercial fisheries for which limited entry regimes were not explicitly in place especially in estuarine and embayment fisheries. This measure effectively capped numbers in the inshore fisheries of the state. Although not explicitly aimed at resource sharing, the aim of government was to curtail future conflict between the inshore commercial fishing sector and the recreational sector. Government held discussions in 1985/86 with commercial fishing representatives. This became known as the "Mandurah Working Group". The group recognized that excess capacity in the fishing industry was raising concerns about the financial viability of fishing operations and impacts on fish stocks. The group found that "these difficulties are manifested by an excessive number of boats in small unmanaged fisheries causing local conflicts and fears for the continued viability of those stocks" (FINS, 1986, p12). This included the estuarine and embayment fisheries. The peak industry body wrote to the Minister for Fisheries (FINS, 1986) proposing that the number of boats (fishing units) in open access fisheries be reduced to: distribute the catch over fewer fishing units to increase the viability of the remaining fishing units; reduce the number of fishing units to prevent the release of latent fishing effort in the fishing fleets; and reduce the competition for the fish stocks to relieve the (fishing) pressure on the fish stocks being targeted and benefit all user groups, including the recreational sector.

The group proposed a licence buyback scheme, together with a greater level of management, through essentially introducing limited entry fisheries. The group believed that, if these measures were accepted, the benefits would flow to the whole community, reduce conflicts within and between user groups, and reduce pressure on government to resolve these conflicts. The group recommended that the cost of the licence buyback scheme be shared equally between the commercial fishing industry and the community, and proposed a levy per fishing unit that would be matched by Government funding as the community component. These views were generally accepted by the government and the Fisheries Adjustment Schemes Act 1987 (FAS Act) was introduced. This act had the capacity to raise levies from the commercial fishing industry. The Fisheries Adjustment General Scheme (General Scheme), which was established under the Act, raised an annual levy that was matched by government on dollar for dollar basis, and resulted in 118 fishing licences being surrendered; 64 were in south-western estuarine fisheries. The group recommended that the licence buyback be reviewed after five years. The peak industry body withdrew support for the industry levy, and hence the matching government contribution, in 1998 as it considered that the general scheme had achieved its objectives. The general scheme ceased in 1999.

Over the period 1986 to mid-1996, the general scheme withdrew a total of 187 inshore fishing authorizations, resulting in an overall reduction of about 10% of the commercial fishing fleet, with the current fleet now about 1 350 boats. This was the underpinning of subsequent adjustment processes explicitly focused on reallocation of fish resources. It succeeded in removing much latent effort in the inshore and estuarine sector. Given the age structure of the fishers, coupled with the restricted nature of transferability, it also provided a social 'safety net' or exit package for those wishing to cease fishing at relatively modest cost to the taxpayer and industry.

3.1 Application of the FAS Act

The Fisheries Adjustment Scheme (FAS) Act provides the mechanism for structural adjustment through the payment of compensation for the surrender of commercial fishing authorizations. The act provides for both voluntary and compulsory schemes, and sets the requirements for consideration of a when a fishery. When considering a voluntary scheme, the act requires the Minister for Fisheries to establish a cross-sectoral committee to provide advice firstly on whether there are grounds to consider establishing a scheme, and secondly to provide advice in respect to offers made to surrender fishing authorizations to a scheme. It is normal practice to have recreational and commercial fishing representatives, a delegate from the Department of Fisheries and an independent chair on the committees. The committee provides advice on the value of authorizations being offered to a scheme. The decision to establish a scheme, and the ability to accept offers or make counter offers, rests with the minister. The act provides options to have compulsory schemes or industry funded schemes, but these are not discussed in the present paper.

Voluntary schemes with a reallocation objective have not normally been applied to high value fisheries, as the compensation costs would be significant. These fisheries already have comprehensive management structures in place, catches are more predictable, and the fisheries are mainly cost recovered. High value fisheries where there is a significant recreational fishing component are currently the prime focus of the state's integrated fisheries management initiative, which is described elsewhere (Rogers 2006).

3.2 Schemes focused on resource reallocation

In 1996-97, government announced that funding would be available over four years for voluntary schemes to accelerate the reduction in numbers in key commercial fisheries – primarily the estuarine and embayment fisheries where there were resource sharing

conflicts. This funding initiative was launched in tandem with a process of mediation designed to obtain management outcomes to complement or supplement voluntary adjustment processes (Wright *et al.* 2000). Priority fisheries were determined by the minister after consultation with the peak commercial and recreational fishing bodies, and upon receipt of advice from the committees established for this purpose under the act. Schemes were then established in a priority order. The schemes specifically targeted commercial fisheries in areas of increasing population growth in the southwest where the community expectation is that there will be fish available for recreational fishing. The presence of commercial fisheries (for whatever reason) conflicts with the expectations of the general population in terms of recreational enjoyment. The use of schemes and payment of compensation was designed to achieve a broader community objective. For the period 1987–1997 the number of fishing units was reduced by 41% in the five estuarine fisheries (i.e. Swan Canning, Mandurah, Leschenault Inlet, Hardy Inlet and South Coast estuarine fisheries). This was due to natural attrition and licence buyback through the general scheme (Pearn and Cappelutti 1999). Voluntary schemes resulting from the \$8 million initiative saw a further reduction of 24 units (28%) from January to October 1998. Since that time, a further 33% of the remaining fishing units have been reduced leaving a total of 39 fishing units in these fisheries. Following the initial initiative, government has continued to provide fisheries adjustment funding through annual budget allocations.

3.3 Experience in the application of schemes

As is evidenced, Western Australia has a long history of running fisheries adjustment schemes, first through the general scheme, and then through a series of targeted schemes. Most have incorporated an aim to reduce intersectoral conflicts through permanent reductions in the number of commercial fishing units operating in these fisheries. The general scheme was the first voluntary scheme operated in Western Australia. It was established when there was already a market for the goodwill value of transferable licences. Initially the general scheme acted as a market follower, rather than a price setter. This changed over the life of the general scheme to a situation where prices offered through the scheme would set benchmark prices. In other words, as the market price for licences fluctuated (often quickly) prices offered by the scheme were more stable, and provided the 'fall back position' to fishers.

The licence valuation techniques used by the committees for schemes have been refined over time. In most cases, the minister makes offer prices based on a Net Present Value calculation of the annual return for the average licence in the fishery. This in general equated to about twice the average gross annual landed value. The minister will usually offer only one price for each round of a scheme. Certain general trends can be recognized in the administration of schemes:

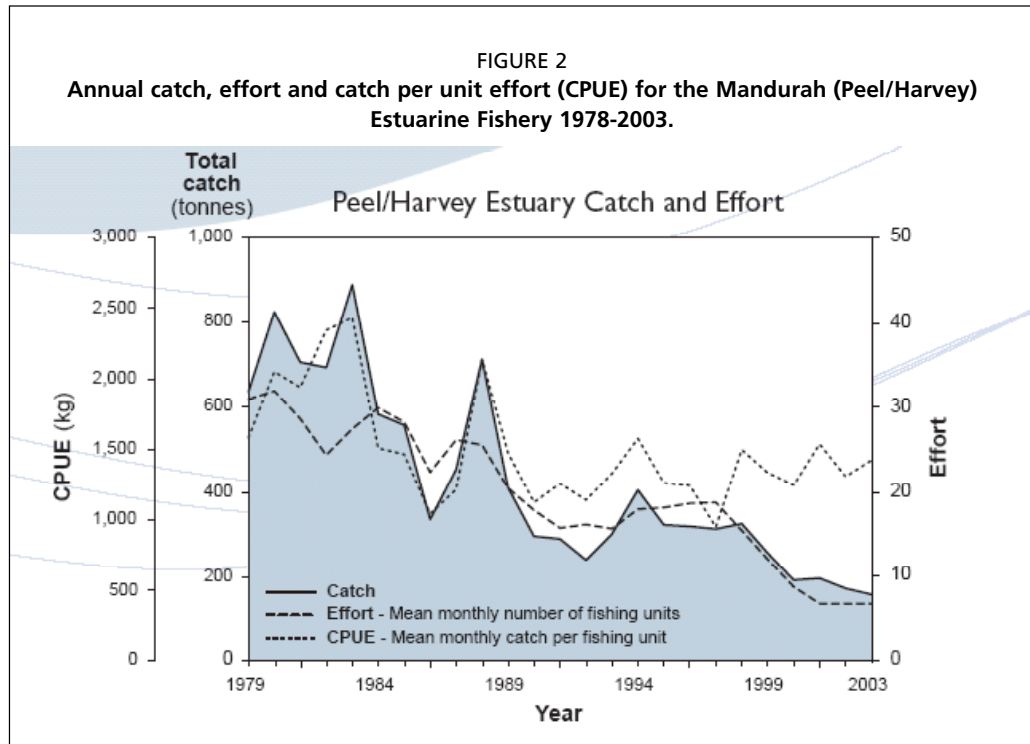
- **Latent effort.** Most first rounds of a scheme remove latent effort, i.e. fishers who were seeking to retire from a fishery, through a combination of local social pressures, low economic returns, age/health related matters, and are seeking some 'remuneration' to realise the goodwill value of fishing licences.
- **Expectations about the value of a licence.** A price based on the average catch value is not attractive for active fishers at the higher end of a fishery, especially if there is a lot of latent effort in the fishery. As latent effort is removed permanently through a scheme the remaining fishers will seek increased prices for the surrender of licences in subsequent rounds because they generally generate income greater than the average and can lead these fishers to feel their licences are undervalued. However, for reasons of equity, common practice is for the minister to make standard offers to all fishers regardless of catch history. Making value judgements on the individual returns for each fisher is difficult, especially when the public purse is being used.

- **Wholesale removal of fisheries.** In one instance an entire fishery has been bought out in the first round, e.g. in the Leschenault Inlet Estuarine Fishery. Here, through escalating community pressure and declining environmental quality, there was a sound economic case for the fishers to decide to exit the fishery en bloc.
- **Influence of public policy.** A government objective of reducing the number of units in a fishery can have a direct bearing on the value of licences. In these instances consideration needs to be given to offering a premium on licence valuations, given schemes are voluntary and fishers are not required to either make or accept any offers. This can create a situation where a scheme needs to compete in the market place to attract offers, while taking care not to drive the market upward. Alternatively, schemes can provide realism into fishers' expectations of the goodwill value of their licences. There is often a misconception that the public purse is bottomless. The value offered for a licence can relate to the priority given, ultimately by government, to reducing conflict levels or the resource reallocation objectives given to a fishery, especially when considered against available funds for fisheries adjustment purposes. This is true when the impetus for a scheme comes from the commercial fishers themselves as a consequence of failing markets, poor catches or increasing competition from recreational fishers.
- **Relation to management objectives.** In providing advice on schemes, committees need to be aware of management arrangements for the fishery and proposed management changes after finalization of a scheme. The committees also have to consider the potential for other commercial fishers to "take up" the benefits of a scheme and effectively replace those fishers that have exited under a scheme, as well as their ability to shift effort to other fisheries where multiple licences are held. Similarly, committees must to consider the potential for schemes to "follow" fishers through a succession of schemes as multiple licences are progressively surrendered. It is better to adopt a position of not accepting the piecemeal surrender of licences at the outset. The complete removal of fishing units, with the appropriate compensation, should be the preferred option.

3.4 Outcomes

Significant reductions in fisher numbers have occurred in Western Australia's estuarine and embayment fisheries, with corresponding reductions in commercial catch, such as the Mandurah Estuarine Fishery (Figure 2). However, it is often not possible to measure a resource shift arising from these schemes. Average catches may increase in the commercial fishing sector because of environmental factors, variations in stock recruitment that may (or may not) be identified by research, economic factors, changes in markets, periodic shifts in fishing effort or the vagaries of weather. The greatest impact of schemes has been where the number of licences withdrawn has reduced commercial fishing numbers to very low levels. Where the remaining commercial fishers have been unable to improve technology or to significantly increase fishing days, there has been a real potential resource shift to the recreational sector. Unfortunately, not all the former commercial share will be available because of the declining ecological status of many of Western Australia's estuaries.

While there is a *prima facie* case for increased availability of catch for the recreational sector, quantifying the extent of any resource reallocation is difficult because of the lack of recreational catch data. This has raised questions of the value of adjustment and perceptions that remaining commercial fishers are the primary beneficiaries (Stagles 2005). Alternatively, the open-ended nature of recreational fisheries can mean any benefits are quickly absorbed into this sector, with little discernable benefit to the individual fisher. This is compounded by a small percentage of "top end" anglers who characteristically take the bulk of available recreational catch through a combination



of skill and persistence. These fishers are the immediate beneficiary of reallocation mechanisms (Kearney 2002; p 150). The recreational sector and government are now seeking material benefits (spatial or demonstrable) as an objective or consequence of schemes, largely because the recreational fishing community cannot discern any tangible benefits of previous schemes. These include the introduction of further recreational fishing only areas.

3.5 Unforeseen consequences

A key to success in fisheries management is the quality and quantity of biological and catches data available to provide contemporary stock assessments. These are also indicative of the general health of a marine environment. As commercial fishers are required to provide catch returns and are in dialogue with research and management officers, they provide the hard data and anecdotal evidence that management decisions are often based on. The Department of Fisheries relies considerably on compulsory catch and effort returns as a tool in determining fish stock status. Some of these datasets stretch back to the mid-1940s. The incremental reductions in commercial fishing unit numbers, while worrying in terms of reducing the sampling base, have still seen a stream of data available.

More serious to research has been the total removal of commercial fisheries, e.g. the Leschenault Inlet Estuarine Fishery. Anecdotal evidence is that recreational catches have not improved (at least not to the extent that the common perception of commercial fishers taking all the catch would suggest). However, in the absence of commercial catch data, the department cannot respond to requests for contemporary stock assessments. While recreational surveys are planned, they are, in comparison with commercial fishing data, expensive, time consuming, and periodic. Thus the sudden removal of commercial fishers can mean a source of catch data (often long term data sets) is lost, and can lead to a situation of having: no replacement data available for fish stock analysis and assessments; no replacement data systems in place to ensure continuity of data; and/or data sets that are not calibrated to ensure integrity of data for making management decisions for both commercial and recreational fisheries.

The government has therefore had to provide budget allocations for recreational fish surveys to compensate for a declining commercial database. It is also investigating instituting recreational angler logbook programs, as well as a range of surrogates for measuring fish abundance.

4. DISCUSSION

There is a paradox of allocation in Western Australia. The state currently has an integrated fisheries management initiative to initially target allocation issues in high value species, such as abalone and western rock lobster. There are known participation rates and an abundance of supporting data in these fisheries, making allocations easier. In contrast, the estuarine and embayment fisheries with a low economic value, valued lifestyle components and higher levels of conflict, through either competition for the available fish resources, perceptions of inequity or the physical presence of commercial fishing activities, are where allocation decisions are being made with cruder tools and less data.

Voluntary schemes are a means to shift resource share with the assumption that reductions in commercial fishing provide a corresponding increase in the available recreational catch. The voluntary nature of these schemes mean an outcome (at least in the short term) can be uncertain, but history shows they are effective in the longer term in achieving permanent reductions in commercial fishing effort. In Western Australia, a long-term program of operating schemes has enabled significant reductions in the number of commercial fishing units.

Significantly reducing these commercial fisheries reduces catch data available for research purposes. This must be addressed, given the recreational sector will continue to demand contemporary stock assessments, particularly if catch rates decline. In Western Australia, given the now relatively low level of commercial fishing effort in these fisheries, and their likely low percentage take of the total catch, the issue is becoming whether there is public benefit in further effort reductions, or whether the funds would be better spent in gathering higher quality data on recreational fishing effort and stock status.

Quantifying the success or extent of resource reallocations as a consequence of schemes remains problematical. Has there been an increase in the availability of fish stocks for recreational fishers in the estuaries and embayments since schemes commenced? Has there been an increase in the number of recreational fishers in these waters? And, has there been an increase in recreational catches as a consequence of schemes? There is no definitive answer. The ability to prove that a change in resource reallocation has occurred as a result of a scheme is difficult because of the lack of recreational catch data to coincide with the available commercial catch data, especially because the schemes may first absorb latent effort. The lack of apparent success in resource reallocation can cause the recreational fishing sector to seek tangible benefits from future schemes or management measures. However, there is benefit in undertaking resource reallocations through maintaining effort levels of existing commercial fishers and the removal of real and potential effort through schemes.

With the value of hindsight, reducing commercial fishing effort through schemes is a preliminary process, in place until the more fundamental issues of resource reallocation can be addressed. Alternatively, an objective may be to reduce a commercial fishery to a particular level, which is seen as a suitable compromise between the sectors.

These debates, seeking co-operative management arrangements between the commercial and recreational sectors, have not been widespread in Western Australia. This view is reinforced when a progressive historical view of schemes is taken. The objective of the general scheme was to provide the mechanism to generally reduce commercial licences across a broad spectrum of fisheries. This progressed to a series of targeted schemes, with no specific allocation objectives other than to reduce the

number of fishing units in key fisheries. This led to schemes where there is a clear political objective for a particular fishery, such as phasing out the commercial fishery. It is anticipated that there will be further schemes with specific resource reallocation objectives, which will presumably form part of the broader integrated fisheries management debate.

The opportunity cost of not having operated schemes needs to be taken into account in any consideration of the impact of schemes in Western Australia. While it is not appropriate to provide specific prices there is empirical evidence that the cost variation between similar licences surrendered under the general scheme when compared to more recent targeted schemes is significant – usually an order of magnitude. Having to now commence the resource reallocation process in Western Australia would be cost prohibitive. Voluntary schemes are not a new panacea to fisheries management or resource reallocation, but in Western Australia the demonstration of persistence, patience and foresight is showing tangible results.

5. ACKNOWLEDGEMENTS

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Hon. Eric Abetz*Minister for Fisheries, Forestry and Conservation**Australian Government**as represented by Barry Haase*

Thank you Mr Chairman. Good morning ladies and gentlemen, may I especially acknowledge the Honourable Jon Ford, JP MLC, the Minister of Fisheries for Kimberley, Pilbara, and Gascoyne; the Honourable Bruce Donaldson MLC, Shadow Minister for Fisheries here in WA; Mr John Glaister, CEO of the Minister of Fisheries New Zealand, representing the Honourable Jim Anderson, Minister of Fisheries; Mr Feleti Teo, Foreign Fisheries Agency; Mr Ichiro Nomura, Assistant Director General Fisheries Department, Food and Agriculture Organization of the United Nations; Mr Omani Bohobasi; and Ken, I'd particularly like to recognize you. Thank you for your appropriate welcome.

I'm very pleased to hear today the opening comments at this Sharing the Fish Conference 06. The new Australian Minister for Fishery, Forestry and Conservation, Senator the Honourable Eric Abetz, sends his apologies for today and assures us he will be taking a very keen interest in all your deliberations.

I welcome you all to the great state of Western Australia. As has been mentioned by our chair, I am the member for the federal electorate Kalgoorlie and it is the largest electorate in the world, of little consolation when one is trying to cover that vast 2.3 million square km. It's worthy of mention I suspect, that rather than the area being noticeable in as much that it is approximately a third the land mass of Australia, its coastline – including bays and inlets – the coastline of my electorate is some 10 000 km. Even more surprising, if you take the coastline of the islands offshore of my electorate, that's another 6 000 km. So a total of 16 000 km if one were to consider the difficulties of sharing just that fish resource, you'd have cause for many, many headaches, so for all of you who are committed to the cause of discussing that over these four days, I encourage you and congratulate you.

My electorate has great mineral wealth that plays an important part in the Australian cattle and sheep industry, as well, and has many, many popular fishing and tourist destinations, If you think of the popular destinations across this wonderful state of ours, Ningaloo, Karijini, Bungle Bungle. Yes they're all in my electorate.

After the conference – if you can do so – I encourage you to stay and enjoy some of the wonderful attractions of this state. And now to business:

There's a broad range of representation here from the different groups with an interest in the fishing industries around the world. The diversity of interests you represent underscores the importance of the resource sharing issues that will be discussed over the next few days.

This conference is an important follow up to the FishRights Conference held in 1999 and will take a further step towards fairly and effectively resolving the issues associated with sharing resources among competing sectors. The conference will explore three main themes: the allocation of fisheries resources across jurisdictions, issues relating to the allocation of resources across sectors, and the allocation of resources within those sectors.

These things were chosen to give a broad view of the challenges and hopefully will result in positive solutions. Trying to find a way to preserve access for the greatest number of users while maximizing economic benefits and above all, sustaining them, is a great challenge for us all, but as experience is gained and the debate matures, it is proving to be possible.

If you look at the impact of fishing on the world's fish stocks...and the growth of aquaculture and seafood trade globally, you will see that the nature of fishing and

the consumption of fish products are changing. It may surprise you to know that in Australia for example, we now import around \$1 billion worth of seafood a year. Most of that comes from Asia. The nature of world fisheries will continue to change because of sustained pressure on resources, the ongoing issue of overcapacity, and the growing demand for seafood in a more affluent and increasingly health conscious world. This calls for a strategic and targeted approach to fisheries management that covers global, regional and national issues

Internationally, Australia is considered to be a small global player in terms of the size of our national fisheries and high seas fishing activity, but we are the major coast state in the southern ocean, and we have a strong reputation as a responsible fisheries and natural resource manager. Australia contributes significantly to the management of fish stocks at a regional level and we are active participants in five regional fisheries management organizations. Australia tries not only to get a fair share of the resource of our domestic industry but to ensure that fish stocks stay healthy and are being sustained. Domestically the management of our fish stocks is shared between the commonwealth which manages outside 3 nautical miles and the states which manage in shore stocks.

The actual take or catch is shared among commercial, recreational, and customary fisheries each of whom has different priorities and needs. Some areas are also protected for conservation in marine parks which are used by the tourism industry. Sharing of benefits or simply the fish among the full range of interest groups in the community who all have somewhat different aspirations is a complex task. That is why the Australian government has established and is now implementing an agreed framework for sharing and management between sectors that use Commonwealth managed resources through 11 basic principles.

The first arrangement is for the tuna and bill fish stocks off the western Australian coast I'm sure information about this will be made available further during the conference. We're also working on developing arrangements for migratory species on the east coast of Australia and we'll need to deal with long-tailed tuna, a species that the Australian government has decided will become a recreational species in northern Australia.

Maintaining the health of global fish stocks is no easy task, as a number of you will have no doubt discovered, as illegal unreported and unregulated fishing has emerged as a real issue for all responsible countries. Australia has been at the forefront, calling for strong action to stamp out illegal fishing. We have strong domestic measures and work closely with other responsible nations and in national organizations who are equally concerned about this issue.

We have been a key participant and significant contributor to the ministry led task force on illegal unreported and unregulated fishing on the high seas known as the High Seas Task Force. This task force will hold its final meeting in Paris on the 2 and 3 of March this year, where a number of ministers, including the Honourable Senator Abetz, will consider a number of practical proposals aimed at preventing and deterring illegal, unreported and unregulated fishing on the high seas. The Australian government has now committed significant funds and efforts to stamp out fishing from illegal foreign vessels in northern Australian waters and the southern ocean territories of Herd and McDonald islands.

The southern ocean activity involves a trade in Patagonian tooth fish whereas the northern activity is largely a shark finning exercise, but increasingly we are seeing activity targeting ground fish stocks and of course reef fish also.

There are two issues central to resource sharing. First, one cannot control or manage illegal unreported and unregulated fishing on your own where management and enforcement involves shared stocks. Second, we are increasingly seeing the emergence of multinational business and companies who are engaged in trade for profit. The problem is how one deals effectively with these rogue companies.

FishRights99 was an excellent beginning, focusing on the use of property rights in fisheries management. Through this Sharing the Fish 2006 conference, we progress further to consider other sectors and their competing needs. The challenge for this conference will be to examine the resource sharing experiences from around the world, build on these experiences and knowledge, and learn from them. The task at hand is not an easy one but I encourage you to work together, find some common ground, and help each other learn through sharing your experiences and listening with open minds.

Let me conclude by saying how impressed I am at the attendance for this conference. I'm sure the speakers will provide an excellent overview of the key issues and set the scene for a healthy discussion. The opportunities that exist to help ensure equitable resource sharing arrangements and sustainable and profitable fisheries will be a major topic for your consideration. I thank the conference organizing committee for their hospitality and I hope you all find this an informative and productive conference.

Hon. David Benson-Pope*Minister of Fisheries**New Zealand**as represented by Dr John Glaister, CEO, Ministry of Fisheries, New Zealand*

Thank you, Peter. Good morning. Firstly, I'd like to present apologies from the Minister. He's attending the high seas task force meeting that Barry talked about and focusing on illegal, unregulated and unreported fishing. Can I also say that the Ministry of Fisheries is very happy and honoured to be financially supporting this meeting and also to have a large number of their key staff here to participate in the conference. The title is significant and highlights challenges that we all face - that is, in sharing the fish.

New Zealand is best known for its quota management system and has a lot of experience in providing for allocation within the commercial share, with market values as a key driver. Not only did the quota management system progress fisheries management generally, but it's also provided mechanisms to resolve one of their greatest allocation issues, that of Maori Treaty Claims. Much of this has already been reported at the last FishRights Conference in '99. And we now have 95 species in the quota management system comprising 550 stocks. The quota system significantly is underpinned by world class science. Now our legislation talks about both sustainability and utilization. Further species that now come into the quota management system will be allocated by tender. So, it's fair to say that we're now in a position of not having to spend too much time on the allocation issues *within* the commercial sectors, and this is because we have allocated the rights and have now established a market system that allows the commercial rights to be traded within a sector. However, there's still much to do, with sharing the fish being a foremost challenge.

Like many countries, New Zealand still faces many cross-sector allocation issues. And I think this conference, as Mr Haase said, provides a great opportunity to provide feedback on more recent work, and from my point of view, more importantly, an opportunity to learn from you. So this presentation looks at international issues across jurisdictions, allocations in general across sectors and within sectors and areas I think we've made some progress.

So turning first to the international – geographically, New Zealand is isolated. The only coast boundary it has is that with its western-most island, Australia. I'd like to pause at this point. I'm reading the minister's speech from New Zealand and I found that remark gratuitous and insulting, because as we all know, Australia is really the north island of Tasmania, but back to the script.

The international component of our fisheries is becoming increasingly important with globalization, increasing demand for seafood generally, and the effects of distant water fishing nations. And I must point out here that New Zealand is in fact a distant water fishing nation itself. Issues of governance and allocation are fundamental to our attempts to successfully manage international fisheries, fisheries that are fished by more than one country.

Unfortunately, these issues can be even more difficult to progress and resolve in an international context where jurisdictional issues, the varying interests and capacities of participants, and ill-defined government frameworks pose significant challenges. Regional fisheries management organizations are a cornerstone of our international efforts to sustainably manage internationally shared fisheries. Most, if not all, however, are plagued by inadequate governance arrangements and are operating in a paradigm that pits national interests against each other to the detriment of effective fisheries management outcomes.

Consensus decision-making further hampers the endeavours of a number of RFMOs and can result in management decisions based around the lowest common

denominator, and I'm sure you'll all be familiar with some of those. New Zealand is actively working within the RFMOs to draw attention to and address these issues. At the second meeting of the Western and Central Pacific Fishing Commission in December last year, New Zealand emphasized the need for the Commission to start considering the issue of allocation and called for the development of a discussion paper on this topic, a proposal that was subsequently endorsed by the commission. Until such times allocation issues are resolved by the commission the incentives on member countries to maximize their individual interests in the tuna stocks managed by the Commission will undermine the Commission's ability to effectively manage these stocks. There a number of papers being presented at this Conference on the complex issues surrounding allocation within WCPFC, and there are a large number of Pacific Island countries in attendance. This all bodes well for progress on this issue.

New Zealand has recently hosted the first inter-governmental meeting on the establishment of a new RFMO for non-highly migratory species in the high seas waters of the South Pacific. Participants in that forum expressed their desire to learn from the experiences of other RFMOs to develop a new organization that reflects international best practice.

New Zealand will pursue the development of a robust decision-making process, and clear rules governing participation in the RFMO, allocation and participatory fishing rights, and how to deal with non-members. We will also be promoting mechanisms to ensure the new organization and its members are accountable for the performance of the RFMO in achieving its objectives with regard to sustainable utilization of fisheries and the protection of marine biodiversity.

A particular challenge will be in the development of allocation principles and rules for discrete high seas stocks covered by the RFMO. What is the nature and extent of coastal state rights relative to distant water fishing nations, and what are the rights of developing countries with respect to these stocks? Little guidance is provided in international law on these difficult issues.

In terms of other allocation work, a lot of effort is currently underway in New Zealand looking at how fisheries resources might be allocated between commercial, recreational, and customary interests. Work on much of this will be reported at this conference

How to 'share the fish' is a central issue for fisheries management in New Zealand.

Different jurisdictions have tried and are developing different methods and approaches to this, so I think much is to be learnt from hearing about the detail on that experience and discussing and exchanging views both during the conference sessions and more importantly, during those less formal opportunities.

I'd just like to share with you some Areas where I think New Zealand has made good progress.

Firstly, looking at spatial temporal allocation issues in aquaculture reform – over the last ten years there has been rapid expansion of aquaculture in New Zealand. In some regions aquaculture is now competing with existing commercial, recreational and customary Maori fishers for access to limited coastal space. How we manage the interaction between aquaculture and wild capture fisheries is important.

The speed and scale of this expansion has caused conflict between fishers and marine farm developers, and this led to the enactment of new legislation in 2004 providing for a more prescriptive approach to development. The legislation contains much that is innovative, including the provision for commercial fishers and marine farmers to negotiate voluntary agreements concerning where aquaculture can and cannot take place. And, this is through the adverse effects test and a market-based solution. The reform has also resulted in the settlement of claims by Maori to a proportion of water space. These are significant outcomes which have largely resolved conflict and provided the aquaculture and fishing sectors a firm basis upon which to build a shared future.

Oceans policy is another area that continues to be a challenge for us is the development of an oceans policy. For very good reasons, there's been a plethora of legislation that's evolved which has dealt with particular aspects of oceans, but that has resulted in legislation that essentially conflicts. Our oceans policy is still under development, but experience to date suggests there are a number of complex factors that will need to be addressed in order to progress an allocation policy for the oceans.

Fishing can coexist to some degree with other uses of the marine environment, such as the protection of natural character of the coast, marine farming and mining, but competition arises between uses as well as between fishers.

Competition should be resolved in a manner that is fair and leads to the highest value use of those resources, and issues that need to be addressed include how trade offs should be made between conflicting uses, the tension between secure property rights and flexibility to provide for change in uses, and how to provide for the national interest.

Allocation between commercial and recreational and methods to achieve optimum allocation – this is another area where a significant amount of work is occurring. As competition over access increases between commercial and non-commercial users of fisheries resources, existing approaches to providing that access come under pressure.

In that context, the ITQ based commercial regime is a seemingly obvious first base in intersectoral allocation and the division of the total allowable catch among the sectors. So what you have are quite tightly held individual commercial rights versus a recreational collective right. So, we're talking about dollars versus whatever the recreational values, whether it be larger fish or high sea sightings per unit effort (SPUE). The market can deal with the dollars but how to get the market to deal with the recreational aspirations is the challenge. However, gaining agreement to a set of criteria that would deliver reasonable certainty over how individual fisheries would be handled has not yet been achieved. And I believe this certainly is the key to it. A finer-grained approach may be required, using a mix of management tools that can be combined to address both large scale issues of access, and more localized issues of value enhancement and intersectoral conflict.

An optimum allocation of the available catch to recreational and commercial interests is central to maximising the value of shared fisheries. We are currently examining the methods used to set and alter the sectoral shares, focusing in particular on the methods used to assess, and respond to, changes in the recreational value of a fishery.

Basically now to conclude, I'd like to say, that New Zealand I think has made a good start. Having been there for just over 12 months, I can tell you that I can see the benefits of the support of a commercial sector and what that can mean. At the RFMA meeting the other week, the minister announced that a benthic protection area proposal that had been proposed by the industry was on the table. Now this came about in June last year, the Ministry went to the commercial leadership and said that we were interested in progressing debate on the environmental effects of fishing this particularly around metals and sea birds.

The industry responded by saying that "we're interested in looking at broader issues" and came up with an idea of a marine protected area proposal. The criteria they are looking at would be that it would be significant size, be representative of the different habitats, and permanent under the fisheries act. The sort of selection criteria they'd looked at was that the areas would be unmodified, so essentially untrawled, that there would be representative of EEZ geographic regions depths marine environmental classifications and underwater topographical features, or seamounts, that they would be large, simple in form to optimize compliance, and consistent with the government stated policy of 10% protected area. So there was a draft prepared in December last year, and the ministry had a look at the draft and made some suggestions including looking further at the depth ranges, productivity, full representation of marine classification areas, and the latitudinal and longitudinal spread.

The proposal that came back last week is to put simply, extremely bold. New Zealand has the 4th largest EEZ in the world, and to give you some idea, the area proposed includes 31% of the New Zealand EEZ, includes 42% of all the seamounts. It will be the largest marine protected area in the world if it proceeds. To give you some idea of the scope, if you took the average EU coastal state and its EEZ, this area proposed is double that. So what the minister has agreed to is to go out for a consultative process, which will happen pretty soon, allow input from all the interested groups, and then move to legislation. I'd be happy to share this in further detail with anyone that's interested during the conference.

I'd like to finish by saying I think the QMS great from New Zealand, but it's really almost in the nature of an unfinished symphony. The real application through market mechanisms has been extremely successful within the commercial sector, albeit there has been a lot of pain along the way, but the challenge now is in those shared fisheries which occur across sectors, which I'm sure that's a problem that is common for us all.

Thank you.

Ichiro Nomura*Assistant Director General**Fisheries and Aquaculture Department**Food and Agriculture Organization of the United Nations*

It is a great honour and pleasure for me to be with you at this conference, and to have the opportunity to share my thoughts about an inherent part of fisheries management, namely, the issue of allocation.

I commend the Governments of Western Australia and of Australia and the Ministry of Fisheries New Zealand for their vision in organizing an event such as this. It is an enormous and consuming undertaking. Indeed, it is a great tribute to the foresight of the Fisheries Department of Western Australia to be hosting another significant and globally relevant fisheries management conference just six years after hosting FishRights99, Use of Property Rights in Fisheries Management – a conference in which FAO similarly cooperated.

As I think about the impressive achievements of our host institutions, as well as those of the distinguished participants of this conference, I am looking forward to the constructive and positive dialogs that I believe are about to take place. I think that we will have an extremely productive conference that looks at the sometimes – no, let me rephrase that – the frequently difficult and often contentious topic of sharing our limited fisheries resources.

The topic of allocation – how we can share, portion, allot, distribute – is at the heart of any and all of our efforts around the world to manage fisheries in ways that enable us to sustainably utilize our fisheries resources. Thus, it is the aim of this address to look at: how we have addressed – or not addressed – the issue of allocation; the challenging aspects of sharing our fish, and, looking to the future, what we need to do to ensure the sustainability of our fisheries resources around the world.

How have we addressed allocation issues?

Looking back, we see that culture and societal norms have played a significant role both in allocating – and in not allocating – fish.

Customary marine tenure systems, like those in many of the isles of Oceania and as discussed last week during the FAO Pre-Conference Workshop on the Ways and Means of Allocating Resources, set clear rules for participating in and sharing the bounty of these communities' fisheries.

Elsewhere, such as in Brazil, community-based systems evolved to provide de facto rules for participation and harvesting by establishing informal spatial rules that applied to fishing spots or areas along the coast – enforced simply by virtue of a strong social notion of respect (“respeito”) – and by which fishermen of the community would abide.

In my own country of Japan, centuries of traditional custom and social norms set very strong boundaries determining who could catch which fish and where.

Unfortunately, unless conscious efforts have been made to transform these rules into contemporary law – the weakness and legal informality of these rules has been revealed when they have collided with another rule – the rule of competition or, as some call it, “First in, best dressed.”

In such cases, the norms and rules of one community may not be upheld or respected, especially by those outside the community. Instead, it is the “cowboys” who daringly push their limits to be stronger, to work faster, and to stay out longer – even when they may not be wise to do so – who hope to reap the rewards of outcompeting others.

Elsewhere in the world, where the bounty of the oceans once seemed endless, the question of “Who gets what?” didn't enter into the equation and was not considered a worry. With a seemingly limitless supply of fish, all that stood between the fish and the plate was the captains and crews willing to get out there among it to catch and

deliver the fish. A means of apportioning finite catches did not come into the picture – nor did it appear to need to be considered. But that, too, changed when commercially important stocks started declining faster than technological innovations in harvesting could make up the difference, and it became clear that the fisheries were overfished.

Ironically, although we can find examples all over the world of boom-bust fisheries, we do not seem to have managed to break ourselves of making the same management mistakes. We still tend to fall victim to the habit of applying regulations that hamper the efforts of fishermen to catch fish and that make catching fish harder, more dangerous, and more costly. We still tend to approach fisheries management with the mindset of trying to put brakes on fishermen as they go about harvesting fish.

This approach, however, has not prevented overfishing or overcapacity. Instead, it has provided inspiration to engage in illegal, unregulated, and unreported (IUU) fishing and resulted in economic waste, social strife, and, in some cases, degradation of the environment. Moreover, this approach does not provide an answer to the question of how to share the fish.

Another way of saying this is that, in most fisheries around the world, we have only implicitly addressed the issue of allocation. We have not focused on designing management systems that clearly decide “who gets what” and that let fishermen get on with their business of determining how best to catch the fish. Instead, and in lieu of this, we avoided the question and have taken advantage of – and put at risk – the resilience of the resources in our oceans, coasts and inland waters.

Times have changed, and we can no longer ignore the questions of how to share our limited fisheries resources and how to determine who can catch what, however sensitive these questions may be. Indeed, the longer we avoid implementing allocation mechanisms, the more we risk making decisions that, ultimately, do not lead to fisheries that are as healthy as they could be.

The challenging aspects of sharing our fish: one may ask, “Why is the question of sharing the fish such a sensitive one?” Allocation is a sensitive topic because it means making explicit social, political, and economic decisions.

To help solve this problem, the FAO Code of Conduct for Responsible Fisheries provides principles for framing such difficult decisions. Policy-makers and managers are urged to take into account the social implications of their policies and regulations and, when determining the uses of coastal resources and governing access to them, to take account of “the rights of coastal fishing communities and their customary practices...”²

Additionally, the Code states that “In order to assist decision-making on the allocation and use of coastal resources, States should promote the assessment of their respective value taking into account economic, social and cultural factors.”³

The unfortunate reality is that we are still struggling with the practical means, the mechanics, of how we go about taking these factors into account. It is simply not feasible to try to make all allocation decisions on an administrative or political case by case, fishery by fishery basis because the time it takes to make decisions in this way is usually far greater than what the stocks and the fishermen can withstand.

Socially and politically, allocation means making painful decisions about who will catch or produce fish and about who will have to be excluded. There simply are not enough fish in our capture fisheries to go around to constantly growing and expanding populations. Yet, at the end of the day, how does one explain to a hungry child that there will be no fish to eat because the fish have been allocated to someone else, for example, in order to bring in revenues to the government to help build the country's infrastructure?

Similarly, there are important economic implications of allocating fisheries resources.

² Article 10.1.3.

³ Article 10.2.2.

How much efficiency do we want? Do we simply set up systems that let the markets determine “who gets what”? Alternatively, do we make the conscious decision to let our fisheries be less than fully economically efficient? We can design allocation systems that follow a moderate path that takes social, cultural, and economic factors into account but which, when all is said and done, leaves most of the allocation decisions to the participants to sort out among themselves.

Regardless of how we choose to proceed, we are at the point where we need to deal actively and conclusively with the issue of sharing and with the allocation implications of different types of management approaches – before IUU fishing and conflicts over who gets the fish escalate to a point where allocations decisions have to be made under duress. This is why the Code of Conduct says that “States should facilitate the adoption of fisheries practices that avoid conflict among fisheries resource users and between them and other users of the coastal area.”⁴

In short, the challenge before us if we are going to sustainably develop and utilize our fisheries resources, if we are going to leave our children’s children their due inheritance, we must address the question of “Who gets how much of which fish?”.

What do we need to do to ensure the sustainability of our fisheries resources around the world?

There are three lessons that we have learned over time.

First, is the lesson that fisheries are finite – and, as a result – our catches have to be similarly finite.

Second, is the lesson that participation in fisheries has to be finite. That is, access to capture fisheries must be limited.

Third, is the lesson that even if we limit access and limit participation, we can still overfish our fisheries. Thus, it is not enough to limit participation and to limit catches. There also has to be a sharing mechanism that determines clearly who gets what. Only with this can we create an environment in which people have real reasons to be inspired to be stewards of their share of particular resources, to tend and utilize them carefully and sustainably.

What is this sharing mechanism? It is something that FAO and others have been working on and advancing for more than a decade: the establishment of fishing rights that people can hold – either as individuals, as stakeholders, and/or as communities.

Fishing rights explicitly address the issue of allocation and sharing. Moreover, holders of these rights have every reason to guard the value of their asset by not overfishing and otherwise degrading it – thereby aligning economic forces with conservation interests.

Now, this does not mean a one program of rights fits all fisheries. The ways and extent to which fishing rights can be useful – be they individual, stakeholder- or community-based fishing rights – will depend on the setting in which they are applied and on the design of the rights system.

Nonetheless, from the community-based rights systems in Phang Nga Bay, Thailand and the village run Fishery Conservation Zones of the Mekong in Lao PDR, to the marine exploitation areas in Chile and the Beach Management Units of Lake Victoria, rights-based systems are being implemented to explicitly address the fundamental question of allocating fish.

In conclusion, if we are going share our limited fish, we need to have a straightforward and practical approach for determining who gets which resources. In short, fishing rights are required if we want to explicitly address and resolve the issue of allocation.

I look forward to the next few days as productive ones that will help us develop and extend current thinking on how we may all go about Sharing the Fish.

Thank you very much.

⁴ Article 10.1.4

