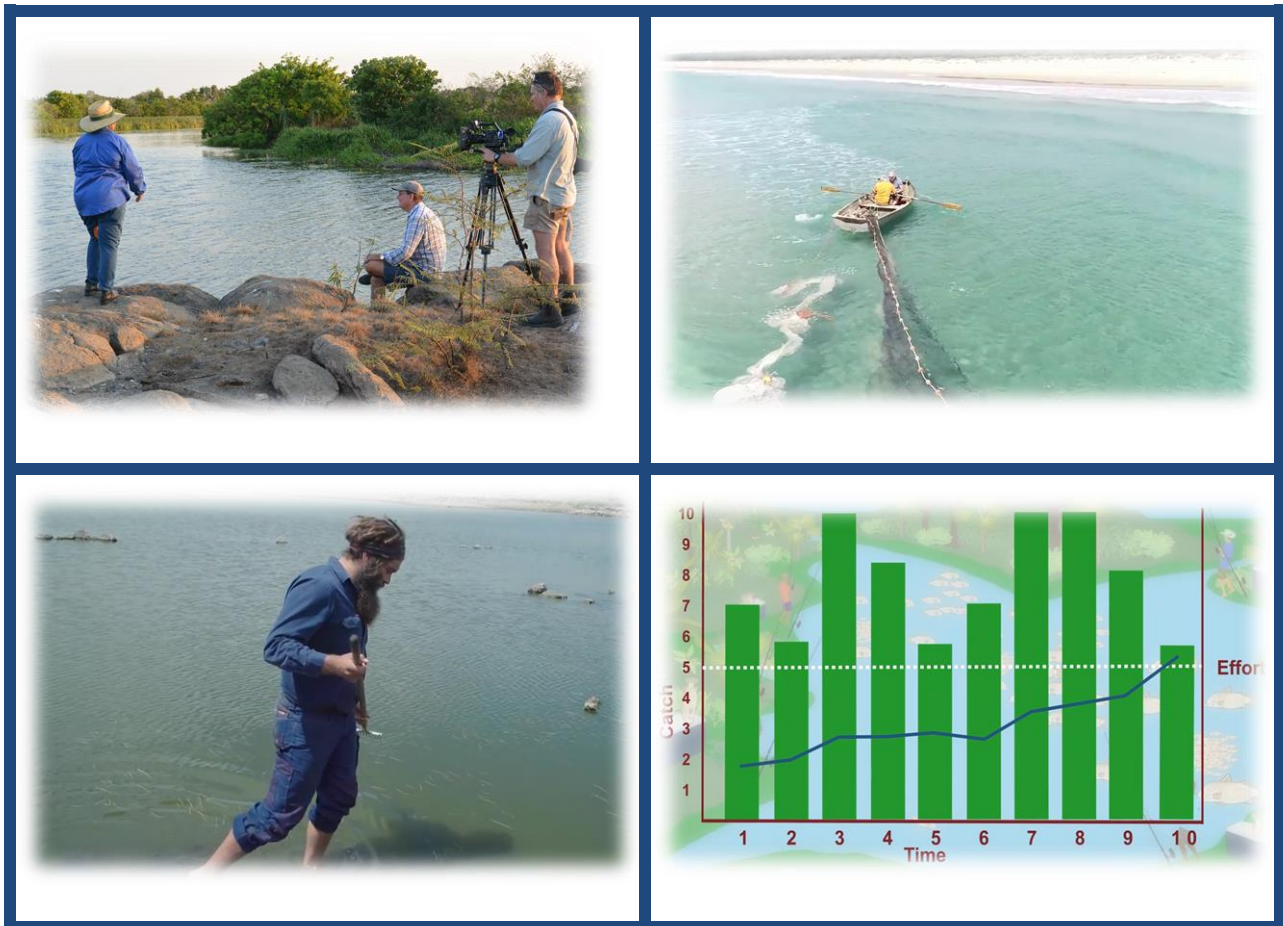


## Indigenous Reference Group: Fisheries Capacity-Building Project



**Ian Knuckey, Jill Briggs, Matt Koopman  
and Matt Woods**

**2020**

**FRDC Project 2017/069**



**Aboriginal and Torres Strait Islander peoples should be aware that this publication and its associated educational material and videos may contain images, voices and names of people who have passed away**

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Indigenous Reference Group: Fisheries Capacity Building Project

FRDC Project 2019/069

2020

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In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

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Finally, we thank all of the workshop participants for their energetic participation, for sharing their stories, and providing feedback that was used to improve the educational materials.

# Abbreviations

DAWE	Department of Agriculture, Water and the Environment
EBFM	Ecosystem-based Fisheries Management
EPBC	Environment Protection and Biodiversity Conservation Act
ESD	Ecologically Sustainable Development
IRG	Indigenous Reference Group
MAC	Management Advisory Committee
MEY	Maximum Economic Yield
MSY	Maximum Sustainable Yield
PZJA	Protected Zone Joint Authority
RAG	Research Advisory Group
RD&E	Research, Development and Extension
TSRA	Torres Strait Regional Authority
VMS	Vessel Monitoring System



# Executive Summary

There is a need to increase the number of Indigenous Australians with the capacity to effectively engage in fisheries management processes, and in general governance issues relating to aquatic resource management. At the time of initiating this project, there was no existing program that was suitable for Indigenous Australians to meet this need. A stated primary outcome of this project was to build on-the-ground capacity for Indigenous Australians to be actively and constructively involved in the process of fisheries assessment and management. This included building the capacity and understanding of Indigenous Australians in technical components of fisheries management and science, raising awareness of formal meeting processes, and developing strengths in leadership. Furthermore, the project aimed to increase awareness of Indigenous culture and customary fishing practices among other fishery stakeholders including managers, researchers, management advisory committee (MAC) members, and research advisory group (RAG) members. Finally, as a legacy, we wanted to create a pathway for the next generation of Indigenous participants to follow so that they can participate effectively in sustainable fisheries management.

In consultation with the Indigenous Reference Group (IRG), educational materials were developed to provide targeted education and capacity building for Indigenous participation in fisheries research and management. These materials comprised a series of six short videos and PowerPoints that can be presented at workshops. Importantly, the videos featured presentations by experienced Indigenous practitioners drawing on relevant customary fishing examples. In addition, a series of “one-pager” documents were produced covering relevant technical issues in more detail than the videos or Power Points and which can serve as enduring reference material for workshop participants. These educational materials were further refined throughout the project based on feedback from workshop participants and from the IRG. All materials are publicly available.

Two, three-day workshops were held, completed, and well received by a total of 26 participants (representing a diversity of genders, regions and ages). Constructive feedback from the first workshop informed and improved the content and delivery of the second workshop. Workshops addressed topics including: Indigenous culture, meeting structures, fish-population dynamics, fisheries data and stock assessments, leadership, meeting protocols, and fisheries policy. Further to this, following a request by the Torres Strait Regional Authority (TSRA), an additional workshop for 14 Protected Zone Joint Authority (PZJA) members was held.

Including the TSRA workshop, a total of 40 Indigenous Australians has participated in capacity-building programs. A secondary outcome of developing awareness among non-Indigenous stakeholders of Indigenous culture including customary fishing and community issues did not take place. However, the video series promotes Aboriginal and Torres Strait people, their culture and their connection to fisheries (including customary fishing practices) to other stakeholders. This is a valuable resource to educate non-indigenous stakeholders in culturally-relevant issues including customary fishing practices and to promote adequate representation of the needs of Indigenous stakeholders in fisheries management decisions.

Developing an enduring legacy through a mentoring program was challenged by a lack of experienced Indigenous mentors with the time or capacity to take on new mentees. However, this capacity building program, through alumni, has the potential to contribute knowledgeable mentors to encourage and nurture the next generation of Indigenous participants to participate effectively in fisheries assessment and management.

## Keywords

Capacity-building, training, Indigenous Australians, Torres Strait Islands, fish population dynamics, fisheries management, harvest strategies, stock assessment, customary fishing, education.

# Introduction

## Background

The Fishery Research and Development Corporation (FRDC) Indigenous Reference Group (IRG) was formed to ensure that fishing and seafood industry research, development and extension (RD&E) delivers improved economic, environmental and social benefits to Australia's Indigenous people. One of the priorities of the IRG is to present capacity-building opportunities for Indigenous people to further their aspirations in the use and management of aquatic biological resources. Specifically, through their work over the last few years, the IRG identified a need to develop the capacity of Aboriginal and Torres Strait Islander people to engage with, and participate in, a range of fisheries management, policy and RD&E processes. The IRG also recognised that there was a need for fisheries research and management agencies to increase their capacity to work productively with Indigenous Australians, but this issue was not the focus of the current project.

In addition to the focus of FRDC and the IRG, there is increasing consideration of Indigenous Australian participation in the management of fisheries. This need has been formalised at the Commonwealth level with the release of the *Fisheries Legislation Amendment (Representation)* Bill 2017 to amend the *Fisheries Administration Act* 1991 to provide for explicit recognition of recreational and Indigenous fishers in this legislation and to require the Australian Fisheries Management Authority to take the interests of recreational, Indigenous, and commercial fishers into account in all its decisions.

## Need

Formal recognition of Indigenous participation in fishing, and consideration of access and allocation to Indigenous people (among other sectors), is proceeding in jurisdictions across Australia. Although the IRG membership comprises highly skilled Indigenous people experienced in fisheries management, there is insufficient capacity (among the 11 IRG members) to meet the demand for Indigenous input into the management of fish stocks across Australia. Thus, there is an urgent need to increase the pool of adequately-skilled Indigenous people to participate in formal fisheries management fora.

Before this project, there was no program suitable for Indigenous participants to gain a basic understanding of contemporary fisheries management processes including fishery science and stock assessment, and formal meeting protocols. Similarly, there was a need for Indigenous participants to understand the governance structures used in Commonwealth and State jurisdictions, and the requirements of Indigenous members at Management Advisory Committee (MAC), Resource Assessment Group (RAG) meetings, or other government fora. Having identified this as a priority need by the IRG, the Fisheries Research and Development Corporation (FRDC) issued a call for expressions of interest in developing an appropriate capacity-building program. Fishwell Consulting and Affectus were contracted to develop and deliver the program.

# Objectives

1. Develop a national, culturally-appropriate capacity-building program for involvement of Indigenous Australians in fisheries management.
2. Build capacity of Indigenous Australians to participate in a range of fisheries management, policy and research and development processes by increasing their knowledge, skills and experience of fisheries research concepts and practices, current approaches to fisheries management and policy, fishery governance structures, understanding of, and capacity to participate in relevant committees and workshops and introducing leadership and building leadership knowledge.
3. Increase the understanding of managers, researchers and MAC and RAG members of potential contributions of Indigenous Australians and cultural aspects of their own engagement processes.
4. Foster an ongoing legacy of the project to enable capacity building to be undertaken regularly as required.

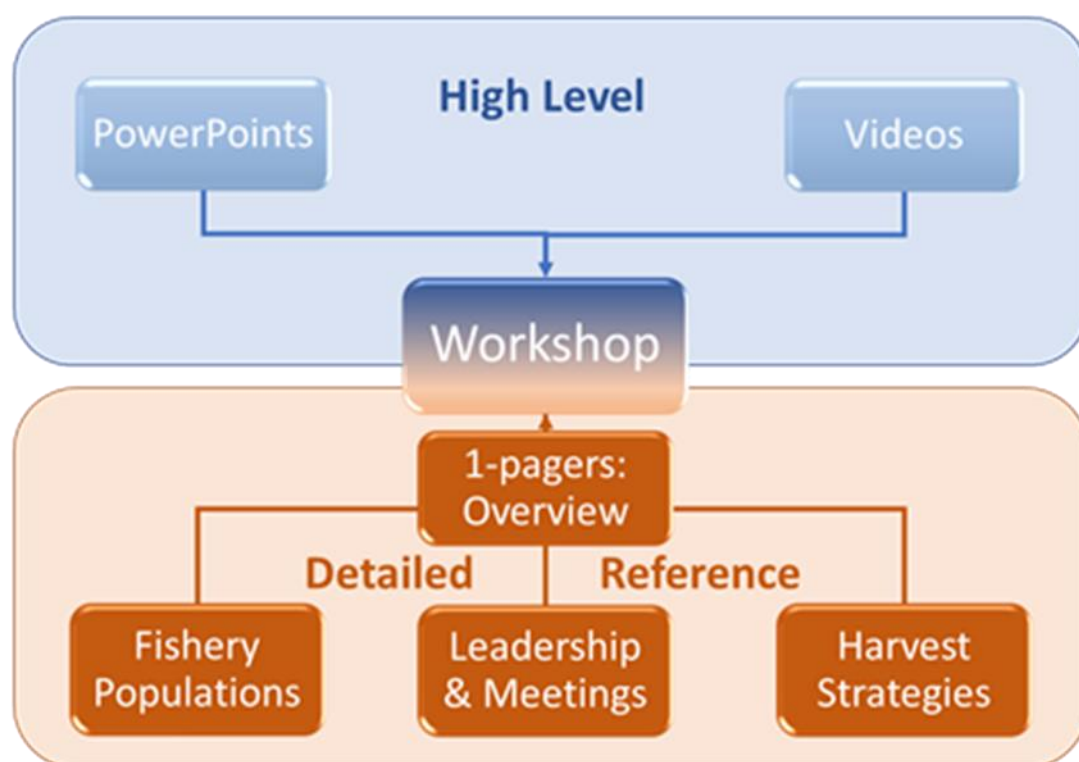
# Method

Capacity building initially followed a workshop format. To support 3-day workshops, educational materials were developed in close consultation with the IRG including: PowerPoint presentations and educational videos. More detailed technical content was expressed in 1-page reference sheets (1-pagers). These 1-pagers were intended for use by workshop participants and to provide enduring reference material for access following the workshops. The potential for mentoring by experienced Indigenous practitioners was also offered to workshop participants. Depending on its intended use and audience, educational material consisted of both high-level general information and detailed information on particular aspects of fisheries and Indigenous participation. A schematic diagram (Figure 1) shows the level of information contained in the educational products as they relate to capacity-building workshops.

Power Point presentations covered general fisheries issues including: interpreting fishery data, fish population dynamics, stock assessment methods, and harvest strategies. The Power Points also presented relevant meeting procedures/protocols and leadership issues including: formal meeting processes, communication, team building, and conflict resolution.

Videos were produced with the aim of contextualising Indigenous participation in fisheries management using examples relevant to Indigenous people and by involving Indigenous presenters to address culturally-important issues such as: connection to country, customary fishing practices, involvement in contemporary fisheries management, and resource assessment.

One-pager documents were developed and produced to focus on technical issues underpinning Indigenous participation in fisheries management. These plain-language resources allowed for more in-depth coverage of the topics above and included a glossary of technical terms



**Figure 1. Schematic diagram showing the level of detail contained in the educational products.**

The project was designed with six phases to achieve its objectives:

- 1) scoping with input from the IRG;
- 2) product development including scripting and filming videos and developing workshop material and a mentoring program;
- 3) an initial workshop with participants to trial and evaluate educational material and delivery methods, and to highlight potential areas of improvement;
- 4) building on feedback from participants in the first workshop, improvement and fine-tuning of workshop content and delivery methods;
- 5) a second workshop and focussed capacity-building of participants; and,
- 6) development of an ongoing capacity-building process potentially including a mentoring program through the IRG and potentially involving previous workshop participants.

## Scoping

The scope of this project was largely guided by discussions with the IRG. The project team met with IRG members in person and through teleconferences. Topics of discussion included capacity-building approaches (including workshop delivery methods), content/scope of educational materials and suggested improvements. We also discussed participant selection, the potential involvement of IRG members (e.g. as mentors), and how best to engage with stakeholders. Participant selection was convened through the IRG in close consultation with the project team to ensure gender equity, jurisdictional representation, preparedness for the technical content, coverage of different fisheries (e.g. shellfish fisheries, scalefish fisheries, crab fisheries, freshwater versus marine), and tribal affiliation/representation.

Project members Jill Briggs and Ian Knuckey met with the IRG on a number of occasions. These meetings served to introduce the project team and to discuss and review the general project approach. Following this, the participation of an IRG member to manage day-to-day liaison with the

project team was recommended. Accordingly, Mr Stephan Schnierer was selected by the IRG and had regular input into the project.

At subsequent meetings with the IRG, drafts of the videos, PowerPoints and 1-pagers were presented for comment and feedback. The final material received full endorsement from the IRG before completion.

## **Capacity-building approaches**

Incorporating feedback from the IRG, capacity building approaches were developed incorporating the knowledge of fisheries and experience in formal fishery management groups and committees, and general training procedures, by project team members. Thus, the development of educational materials and workshop content was informed by decades of experience in communicating with fishers (commercial, Indigenous, recreational) and from experiences of other primary industry education programs in Australia.

Importantly, the involvement of the IRG allowed the incorporation of culturally-relevant content in educational material and in workshop delivery methods. This was particularly assisted by the involvement of an Indigenous liaison person which ensured Aboriginal and Torres Strait Islander culture and norms were addressed in the program. Similarly, a key aspect of the delivery method was a need to effectively engage Indigenous participants in the capacity building program. Use of case studies relevant to Aboriginal and Torres Strait Islanders and, in particular, the involvement of recognised Indigenous leaders as presenters in videos, including case studies relevant to customary fishing, helped achieve effective engagement of Indigenous participants.

## **Workshops**

Two workshops were held to meet the project objective of building the capacity of Indigenous stakeholders. Participants in the first workshop were nominated by the IRG and were invited to attend with all travel, accommodation and meal costs covered by the project. The first workshop provided an opportunity for participants to give feedback on delivery methods and on educational materials that could be incorporated into an improved second workshop. Workshops began with an acknowledgement or welcome to Country, then individual introductions and expectations of participants. Thereafter, the workshop included interactive presentations and descriptions of relevant technical issues including meeting processes and protocols, stakeholder engagement, fisheries science, fisheries management, fisheries policy, and general governance issues.

## **Videos**

Short videos were designed and developed to incorporate Indigenous issues with experienced Indigenous presenters discussing contemporary fisheries management and assessment. Presenters included people from a broad cross-section of the community with consideration of regional affiliation, gender, age, rural/metropolitan, and inland/coastal. All reasonable efforts were made to incorporate Indigenous cultural practices and protocols across Australia with respect to recording and broadcasting images and voices. Within the context of Indigenous culture, the videos explained the basic concepts of fisheries biology, stock assessment and harvest strategies. Inclusion of Indigenous presenters, together with footage of customary fishing practices on country helped engage the target audience. The linkage of real-world case studies, presented and explained by experienced Indigenous people, assisted in increasing understanding of technical subject matter among workshop participants. Importantly, traditional methods of fisheries management used by Indigenous Australians have featured in these videos, together with explanations of how customary fishing practice complements and potentially improves formal government management arrangements. In this way, the videos can be used by other fishery stakeholders (managers,

researchers and recreational fishers) to build their understanding of Indigenous culture and to encourage cooperative approaches with Indigenous stakeholders.

### **PowerPoint presentations**

The PowerPoint presentations were designed primarily for use at the workshops and included targeted material on fisheries (management and assessment) and formal meeting procedures (protocols, conflict resolution).

### **1-page reference material**

One-page reference sheets were developed to include more detailed technical information on specific topics relevant to Indigenous participation in fisheries management. These “one pagers” were intended to be used as enduring references for Indigenous participants in fisheries management fora.

## **Stakeholder understanding of culture and contributions of Indigenous Australians**

The IRG wanted to focus on the development of educational products aimed at capacity building for Indigenous participants in fisheries assessment and management. Increasing the understanding of managers and researchers was seen by the IRG as a secondary aspect of the current project, and one that would be better addressed in a separate project (see Further Development). Nevertheless, this material has a parallel benefit of educating non-Indigenous participants in relevant cultural issues including customary fishing practices. In particular, the video series involving Indigenous presenters on country with case studies relevant to Indigenous stakeholders is a powerful means of raising awareness among non-Indigenous stakeholders in culturally-relevant fisheries management.

## **Capacity-building legacy**

It is recognised that just providing materials and raising awareness of relevant issues in fisheries management and assessment might not lead to increased participation by Indigenous people. For example, a negative experience at one meeting could result in a lack of desire to participate in the future. It was therefore considered important to reinforce the capacity-building program with the involvement of experienced Indigenous mentors who can promote ongoing and lasting engagement of Indigenous participants in the management/governance process across all Australian jurisdictions.

### **Mentoring program**

A mentoring program aimed to engage prominent Indigenous Australians skilled and experienced in formal fisheries management processes to assist the development of Indigenous participation in fisheries management.

# **Results and Discussion**

## **Scoping**

Project members Jill Briggs and Ian Knuckey met with the IRG at their meeting in Cairns on 18 April 2018. This meeting was used to introduce the team to the IRG members and to discuss the proposed approach to Indigenous capacity-building in Australian fisheries management. As part of this meeting it was agreed that the project team could benefit from the participation of an individual from the IRG. Accordingly, Mr Stephan Schreiner was selected by the IRG and helped with day-to-day liaison with the project team.

The first project meeting was held at the Park Royal hotel in Melbourne on 30 May 2018 and Stephan joined the project team via teleconference. At this meeting we discussed potential approaches to capacity-building including details of the proposed workshop and the development of video case studies as described below. Based on the response by the IRG, we developed a series of interview questions to inform the video presentations (Appendix 2).

We developed four different educational products that contain different levels of information:

- 1) Workshops which provide a medium level of information with the opportunity, through interaction with participants, to go into a much greater level of detail on selected topics when needed;
- 2) Workshop PowerPoint presentations and notes which have high-level content;
- 3) Videos which also have high-level content; and
- 4) 1-pager reference sheets which contain a much greater level of detail that can be used as an enduring reference guide for workshop participants.

As the project developed and as the project team became more aware of Indigenous expectations, this informed the format and content of the educational products. For example, getting an appropriate balance between information and the presentation format was an initial challenge in capacity building. Having an Indigenous liaison person was of great assistance in managing project scoping and delivery approaches. Further to this, it was difficult to strike a balance between generic information and specific jurisdictional issues. The approach taken was more generic as participants represented many different jurisdictions. Many participants wanted to address specific jurisdictional issues e.g. state-based assessment and management (these issues can vary considerably from state to state). Future programs could consider specific jurisdictions, for example addressing specific state or territory-based approaches or particular fisheries. Program participants from New South Wales were particularly supportive of this.

## **Workshops**

Workshops were designed to allow for interactive participation of about 10 participants. An aim was to include culturally-relevant content and plain language descriptions of key topics in fisheries management and formal meeting procedures.

## **Power Point presentations**

Power Point presentations aimed to capture high-level content relevant to Indigenous participation in fisheries management and formal meetings.

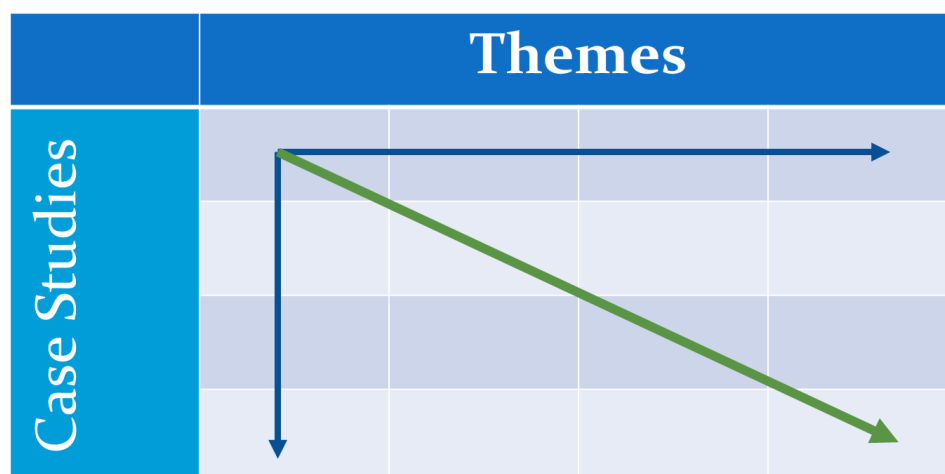
## **Video Case Studies**

There were a number of fishery concepts that we wanted to cover in the video series including information collection, the scientific process, fishery population dynamics and fisheries management frameworks and harvest strategies. Importantly, within each of these topics, relevant Indigenous themes, access and allocation, and issues related to personal confidence, communication and conflict resolution were highlighted. The major themes are outlined below.

- Relationship with Country
- Use of information and knowledge
- Fishery population dynamics
- Fishery management concepts
- Resource sharing
- Meetings / decisions
- Leadership

We had the option of dealing with separate single themes in individual case studies, or every theme in every case study. After discussion with IRG, it was decided to include multiple themes in each case study (Figure 2).

It was agreed that the video series would consist of one overarching video covering the basic concepts of fisheries science and management. To illustrate these concepts, we would use 4 case study examples of Indigenous involvement in fisheries from around Australia. In selecting these case study examples, we endeavoured to include a representative cross-section of Indigenous communities involved in both freshwater country (inland) and saltwater country (coastal and island), metropolitan and rural areas, using both male and female presenters.



**Figure 2. Video case studies included multiple themes.**

A challenge in the preparation of the videos was developing a focus (on individual themes) and ensuring continuity among videos (on the central theme of Indigenous participation in fisheries assessment and management). Again, the involvement of an IRG Indigenous liaison person greatly assisted in developing relevant content and continuity among video presentations.

### One-pagers

Reference material on key topics was developed to provide concise (one-page) summaries of technical issues including a glossary of terms.

## Educational Products

### PowerPoint Presentations

A range of PowerPoint presentations was developed and presented at each workshop. Topics covered were:

#### Fisheries

- Reading graphs
- Population dynamics
- Fisheries data
- CPUE as an index of abundance
- Stock assessment
- Harvest strategies

#### Meetings & Leadership

- Principles
- Formal meeting processes
- Communication
- Personalities
- Teams
- Conflict

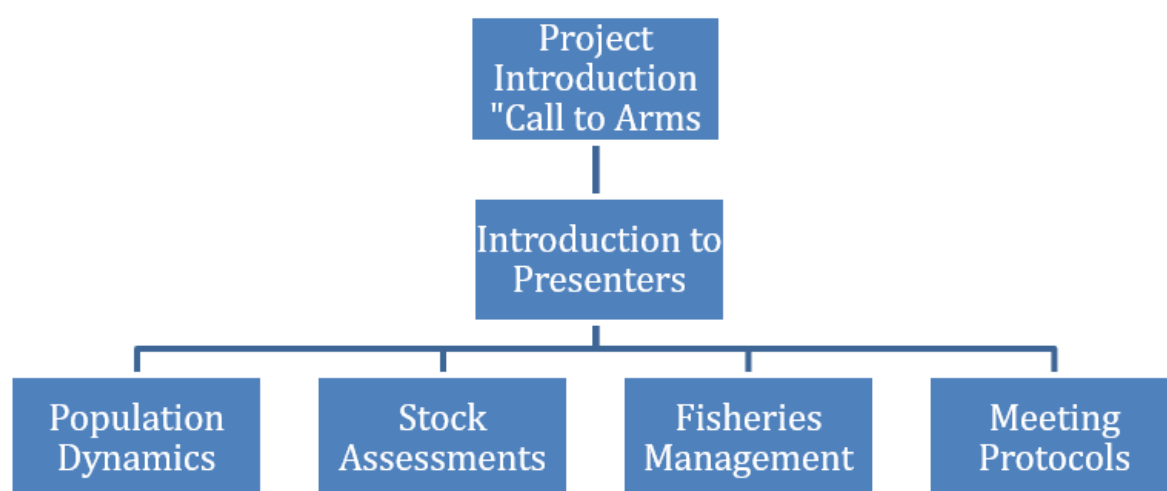
The PowerPoint presentations can be seen at [www.fishwell.com.au](http://www.fishwell.com.au) by following the Capacity Building prompts. An example is shown in Appendix 3.

## Videos

Content for videos was kept at a high level to limit their duration and to focus content. In consultation with the IRG we decided on making six videos, each of less than 10 minutes duration, with an emphasis on issues relevant to Indigenous stakeholders. Videos cover: an introduction to presenters, meeting formalities, getting involved, population dynamics, stock assessments and fisheries management.

During production it was realised that producing videos that included leadership and meeting materials would not be effective or engaging, and so we agreed to change the structure of the videos to have one “Call to arms” primary video that explains the need for Indigenous participation in fisheries management (Figure 3) rather than a separate video on topics of leadership, meetings and mentoring. Other videos include clips of Indigenous presenters talking about their connection to fisheries, customary fishing practices and their involvement with the fisheries management process (including formal government meetings).

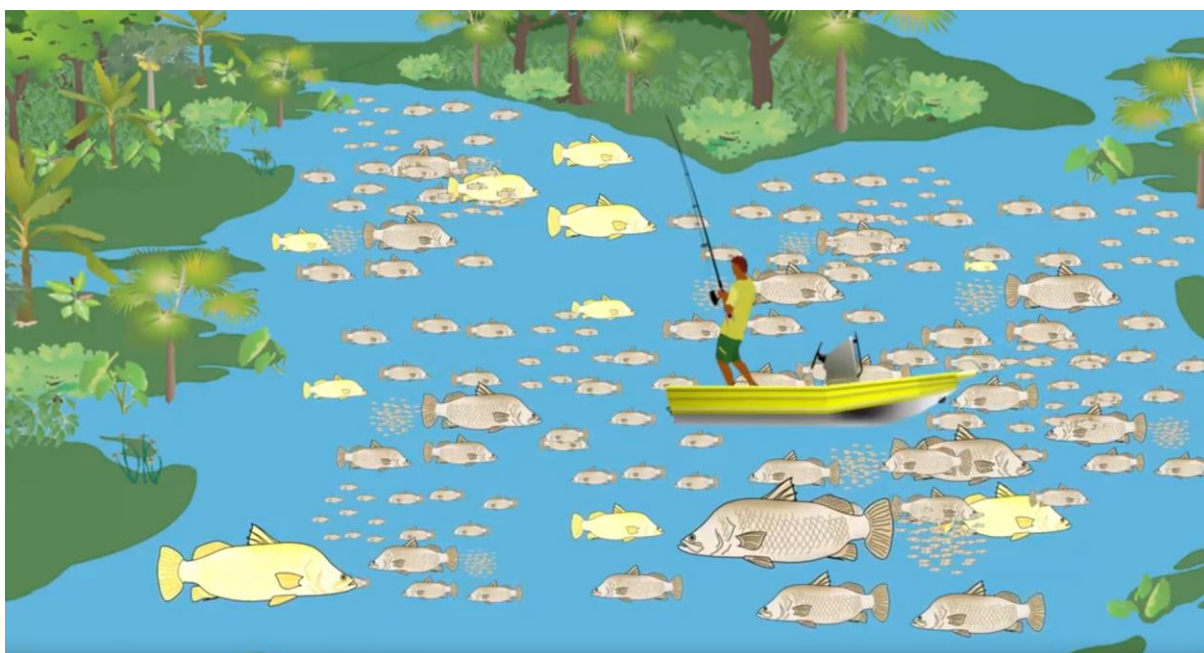
Indigenous presenters (male and female) were mostly nominated by the IRG, and were selected with due consideration to getting a representative cross-section of people involved with both freshwater country (inland) and saltwater country (coastal and island), metropolitan and rural areas.



**Figure 3. Primary video to introduce the capacity-building program.**

To increase the regional representation of presenters, we attempted to meet with Bardi or Nyul people fishing for mud crabs from Cape Leveque, Western Australia; and Gumuligal or Mabuygilgal people fishing for tropical rock lobster in the Torres Straits. Unfortunately, for a variety of reasons these trips did not occur.

The videos include animation to simplify and demonstrate technical concepts, especially in the population dynamics and stock assessment videos. A screen shot of the animation in the early stages of development is shown below.



**Figure 4. Screenshot of the video animation**

Indigenous presenters involved were:

- Mr Bo Carne on the overarching fisheries concepts and comparison of contemporary versus customary fisheries management;
- Dr Linda Ford, a Marranunggu, Traditional landowner of Twin Hill Station, Wagait Aboriginal Land Trust, Northern Territory;
- Mrs Eileen Alberts and Tyson Lovett-Murray, Brayden Saunders, Aaron Morgan, Sean Bell and Ben Church of the Gunditjmara on freshwater eel harvesting and aquaculture around the Glenelg River in south-west Victoria;
- Mr Wally Stewart and Mr Rob Chewying of the Yuin people on fishing and abalone around Narooma on south coast of New South Wales;
- Dr Rowan Henry, a Gunditjmara man and manager of Land, Waters and Values at the Bunurong Land Council Aboriginal Corporation;
- Mr Michael Gilby, a Barkindji man and Director of Indigenous Development at imagineNATIVE Projects.

Indigenous presenters were filmed on country, near or on the water, talking about a fishery resource that is important to them. Our role was to facilitate engagement, linking some of the technical concepts of fisheries assessment and management to the real-world experience of Indigenous Australians. A list of questions (Appendix 2) was used as a guide by the project team to ensure coverage of all relevant issues. These were presented to interviewees before filming. However, rather than a formal interrogation, questions were embedded in conversations with video presenters with some additional unscripted questions asked as conversations progressed.

Videos can be seen at the following URLs:

1. Introducing the traditional owners – building indigenous capacity in fisheries  
<https://vimeo.com/447646692/6bb33b7a83>
2. Population Dynamics - building indigenous capacity in fisheries  
<https://vimeo.com/447648412/7fc6d87a91>
3. Stock Assessments - building indigenous capacity in fisheries  
<https://vimeo.com/447650587/657cc6fe7f>
4. Fisheries Management - building indigenous capacity in fisheries  
<https://vimeo.com/447652406/d47fa6b446>
5. Meeting formalities - building indigenous capacity in fisheries  
<https://vimeo.com/447656582/8f262897a3>
6. Getting involved - building indigenous capacity in fisheries  
<https://vimeo.com/447659203/c3b97b7d0c>

## **One pagers**

A series of “one-pager” documents were produced to be used as reference material for workshop participants. These enabled us to provide a much greater level of detail to workshop participants on topics covered during workshops sufficient to be used as reference documents during and after the workshops. The “one-pagers” also include a glossary of key terms. Key terms are also hyperlinked to enable ease of movement around the document.

The “one pagers” can be seen at [www.fishwell.com.au](http://www.fishwell.com.au) by following the Capacity Building prompts. An example of a “one pager” is shown in Appendix 4.

## Workshop 1

The first project workshop was held in Brisbane from Tuesday April 29th to Thursday 2nd May 2019, with 14 Indigenous Australians from New South Wales, Victoria, Queensland, South Australia, Northern Territory, Western Australia and the Torres Strait (Table 1). The workshop agenda is shown in Appendix 5 – IRG Workshop 1. Feedback from workshop participants on content and delivery was generally positive (Figure 6) particularly for “Fisheries Content” (fishery population dynamics, fisheries data, stock assessment methods) and “Fisheries Delivery” (contemporary fisheries management frameworks, commonwealth/state approaches and harvest strategies), “Meetings Delivery” and “Leadership and Mentoring”. Participants were generally satisfied with “Meeting Content” and “Workshop Productivity” but particularly so with “Comfort sharing opinions” (Figure 6).

Comments and suggestions from participants across all workshop topics were incorporated into a revised program for Workshop 2. However, changes to content and delivery for Workshop 2 were mainly minor.

**Table 1. Workshop 1 participants**

Name	Region	Nation	Name	Region	Nation
Robert Chewying	NSW	Yuin	Donald McKenzie	WA	Jabirr Jabiri
Ben Church	VIC	Gunditjmara	Dell Miller	SA	Nawu
Trinity Georgetown	QLD	Lama Lama	Francis Pearson	Torres Strait	Poruma
Mike Gilby	VIC	Barkindji	Jessica Puntoriero	NT	Larrakia
Garry Goldsmith	SA	Narungga	Rocky Stephen	Torres Strait	Ugar
Lizzy Keys	NSW	Worimi	Joyce Wallis	QLD	Bandjin
Theresa Lemon	NT	Malak Malak	Henry Warren	QLD	Wuthathi



**Figure 5. Workshop 1 participants**

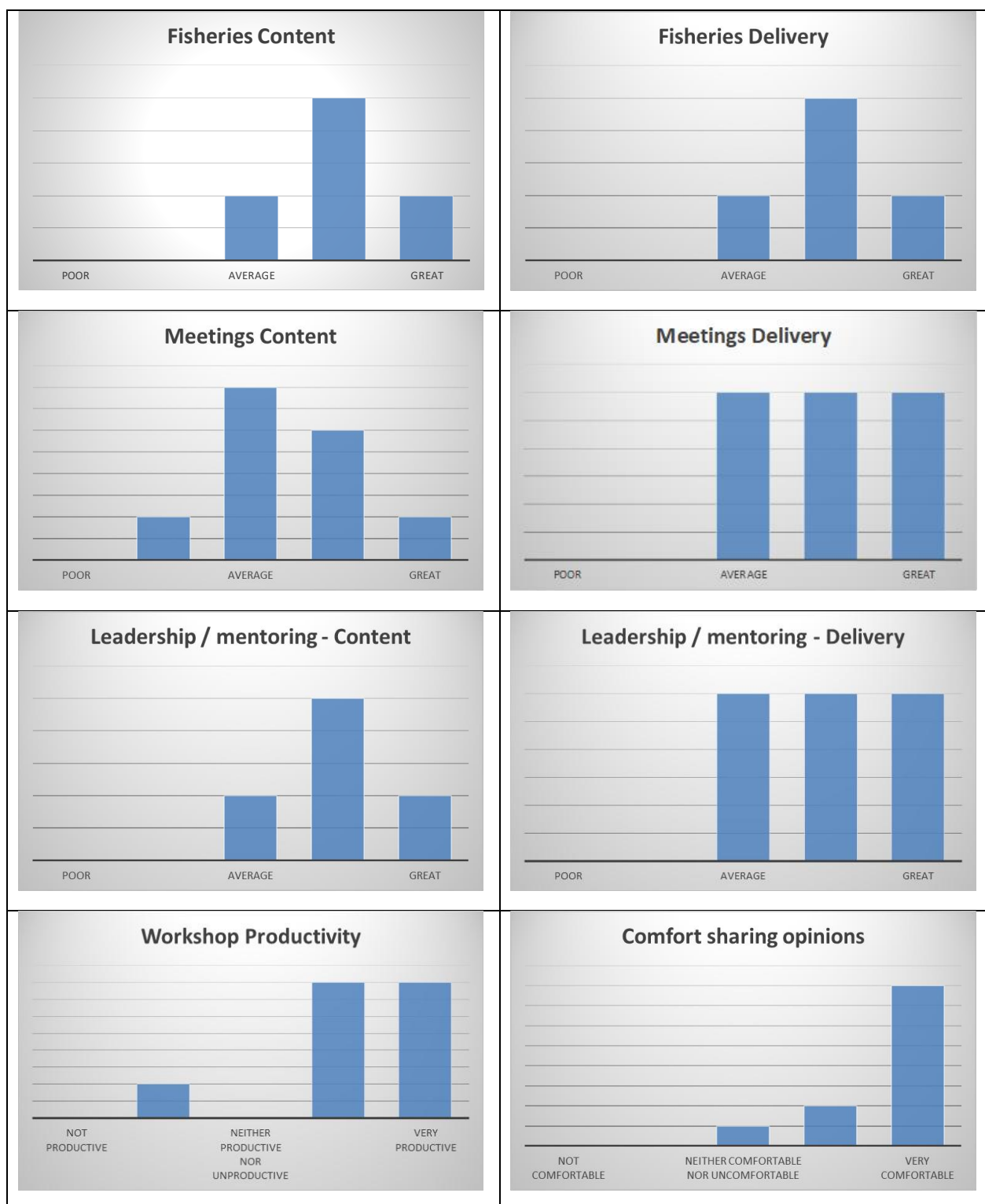


Figure 6. Participant response to workshop content and delivery

## Workshop 2

The second IRG workshop was held in Adelaide from 4-6<sup>th</sup> February 2020 at Tauondi Aboriginal College. As with Workshop 1, the IRG nominated participants for Workshop 2. Participants were from New South Wales, Northern Territory, South Australia, Western Australia and the Torres Strait (Table 2).

Content for this second workshop was modified based on suggestions and comments from participants in the first workshop. One significant change was to have an Indigenous co-facilitator for the workshop. In this respect, we chose Mr Dell Miller, who was a young and enthusiastic graduate from the first workshop that works as Manager, Aboriginal Traditional Fishing for PIRSA. Well-respected for his work in Indigenous fishing and involvement with the Narungga Nation Traditional Fishing Agreement, Mr Miller was able to provide practical examples of application of harvest strategies in Indigenous fisheries in South Australia and relate it back to the course work being delivered.

Also, there was a slightly different approach adopted for identifying participants for the second workshop. Although the IRG was asked for input, we also had recommendations based on word-of-mouth from participants and other people that had heard about Workshop 1. We received quite a few suggestions in this manner and were able to get a good range of participants for Workshop 2. Workshop 2 participants are shown in Table 2 and Figure 7.

The workshop agenda is shown in Appendix 6 – IRG Workshop 2. Feedback obtained from Workshop 2 was overwhelmingly positive (Figure 8).

**Table 2. Workshop 2 participants**

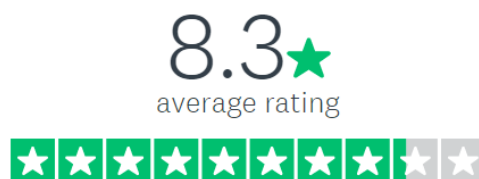
Name	Region	Nation	Name	Region	Nation
Shane Holland	NSW		Cobi Lovett	SA	
Javadd Anderson	NT		Heidi Mippy	WA	
Josh Baker	SA		Hilda Mosby	Torres Strait	
Dave Carter	NSW		Peter Smith	NSW	
Mark David	Torres Strait		Luke Trevorrow	SA	
Kevin Kropinyeri Jnr	SA		Arthur Walker	SA	



Figure 7. Workshop 2 participants

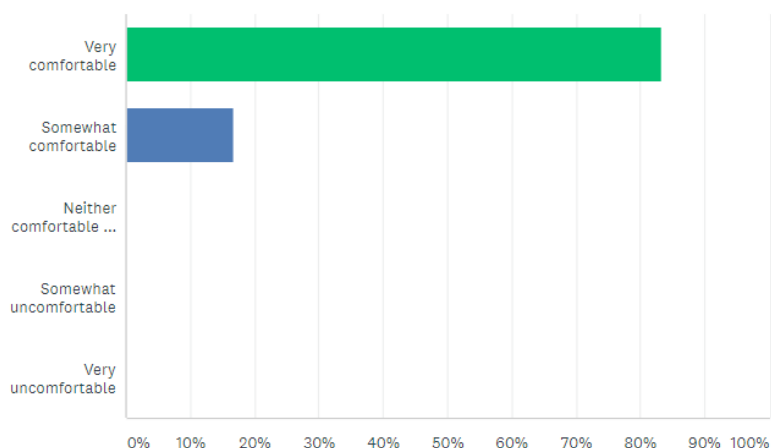
Overall, how effective do you think the workshop was in building your capacity to get involved in contemporary fisheries meetings?

Answered: 7 Skipped: 0



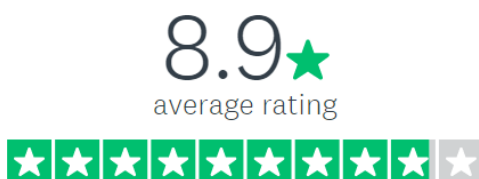
How comfortable did you feel sharing your opinions in the workshop?

Answered: 6 Skipped: 1



Please share with us how effective the workshop was regarding: Fisheries - content

Answered: 7 Skipped: 0



Fisheries - delivery

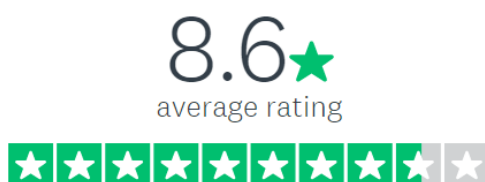
Answered: 7 Skipped: 0



**Figure 8. Participant response to content and delivery at Workshop 2.**

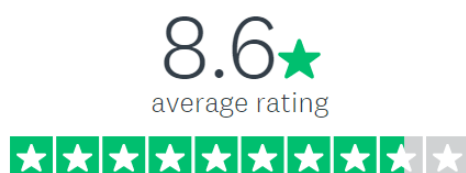
### Meeting protocols - content

Answered: 7 Skipped: 0



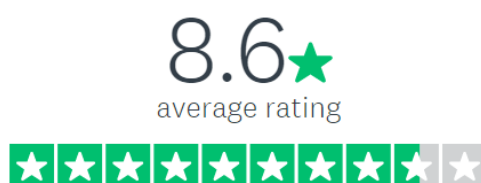
### Meeting protocols - delivery

Answered: 7 Skipped: 0



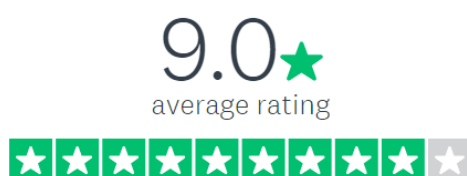
### Leadership / mentoring - content

Answered: 7 Skipped: 0



### Leadership / mentoring - delivery

Answered: 7 Skipped: 0



**Figure 8 (cont). Participant response to content and delivery at Workshop 2.**

## TSRA Workshop

As a complementary activity to this project, Fishwell Consulting was engaged to run a workshop for PZJA members and this was conducted on Thursday Island during May 2019. This workshop followed a similar format to the capacity-building workshops described above, and was funded through the TSRA. Participants involved in various Torres Strait PZJA attended from across the different island clusters (Table 3). The agenda for the workshop is provided at Appendix 7 – TSRA Workshop.

**Table 3. Participants in the TSRA workshop.**

Name	Region	Cluster / Is	Name	Region	Cluster / Is
James AHMAT	Torres Strait	Badu	Gavin MOSBY	Torres Strait	Masig
Frank LOBAN	Torres Strait	Badu	Harry NONA	Torres Strait	Inner Is
Maluwap NONA	Torres Strait	Badu	Michael PASSI	Torres Strait	Mer
Aaron TOM	Torres Strait	Boigu	Les PITT	Torres Strait	Erub
Paul LOWATTA	Torres Strait	Masig	William STEPHEN	Torres Strait	Ugar
Patrick MILLS	Torres Strait	Central	John TABO	Torres Strait	Mer
James BILLY	Torres Strait	Warraber	Patrick BONNER	Torres Strait	Poruma

## Stakeholder understanding of culture and contributions of Indigenous Australians

This objective was not achieved. The Indigenous participants and Indigenous members of the steering group wanted a clear focus on Indigenous capacity building. Although awareness raising of relevant cultural issues was deemed important, it was considered secondary to the primary need of empowerment of Indigenous participants in the fisheries assessment and management process. Even so, capacity building will lead to increased participation by Indigenous stakeholders reinforcing the need for cultural awareness among non-Indigenous stakeholders. The educational products developed in this project, particularly the videos featuring Indigenous presenters, on country, addressing case studies including customary fishing practices, will be a powerful means of raising awareness of, and educating non-Indigenous participants in, Aboriginal and Torres Strait culture including the importance of aquatic resources.

## Capacity-building legacy

Mentoring is an important part of establishing enduring Indigenous participation in fisheries management and assessment. At first this involved IRG members but, as they are relatively few (11) and have other demands on their time, the mentoring program was not successfully applied. Nonetheless, mentor development should be the focus on ongoing capacity-building among Indigenous stakeholders. As an outcome from the present project, alumni from capacity-building workshops could potentially be involved in future mentoring activities. Furthermore, it is recommended that participants in the capacity building program be followed up to evaluate their experience and to determine to what extent the program has assisted their development and participation in fisheries assessment and management. Such information will greatly assist with ongoing capacity building.

# Conclusions

Addressing a critical need for effective Indigenous participation in Australian fisheries management we present an integrated capacity-building program. Based on an interactive workshop format involving some ten participants over three days, educational material including Power Points, videos and one-page reference materials help develop understanding among Indigenous stakeholders in fisheries management and fisheries research. Video presentations include relevant case studies aligned to key topics but in the context of Indigenous fishing practices. The involvement of Indigenous presenters in educational videos helped foster engagement among Indigenous participants and maintain cultural relevance. Further to this, the capacity building program facilitates effective participation by Indigenous representatives in formal management meetings and research groups. Such an approach provides an opportunity for information sharing among fishery managers, fishery scientists and other stakeholders. However, the need to educate non-Indigenous stakeholders remains. Educational materials developed through the capacity building program, particularly videos featuring Indigenous presenters on country expanding on Indigenous case study will greatly assist in raising awareness of Indigenous culture and customary fishing practices. This will help build mutual awareness of Indigenous culture and country applicable to sustainable and equitable sharing of fisheries resources. Materials and supporting resources produced from this project, including culturally-relevant videos, Power Points, and reference sheets, can be used across Australian states and territories to empower Indigenous participation in sustainable fisheries management for the benefit of all stakeholders.

# Further Development

During 2012, the IRG developed eleven key RD&E principles<sup>1</sup> to guide future work of benefit to Aboriginal and Torres Strait Islander people. The current project largely focussed on Output 7 of Principle 5 i.e. Develop community capacity and involvement, including an understanding of mainstream sciences and management processes (Table 4).

During the course of the current project, it was apparent that Principle 6: “*RD&E that leads to agencies developing capacity to recognise and utilise Aboriginal and Torres Strait Islander Expertise, Processes and Knowledge*” is underdeveloped and constrains participation of Indigenous Australians in a range of fisheries management, policy and research and development processes. There is also a need to incorporate traditional fishing knowledge and traditional fisheries management with the mainstream. Although this was recognised as an issue during the current project, it fell outside the scope of work.

Following the completion of the current project, Fishwell Consulting has been engaged by the Department of Agriculture, Water and the Environment (DAWE) in a four-year project to:

- Develop training activities in consultation with Indigenous, recreational and commercial fisheries representatives; and,
- Deliver training activities to Indigenous, recreational and commercial fisheries representatives.

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<sup>1</sup> <https://www.frdc.com.au/frdc-stakeholders/national-priorities-and-subprograms/indigenous-reference-group>

The planned outcomes for the DAWE project are:

1. Participation of Indigenous, recreational and commercial fisheries representatives in targeted capacity building activities;
2. Development of a network of Indigenous, recreational and commercial fisheries representatives to enable the sharing of information and lessons learned from engagement with Commonwealth fisheries management processes; and,
3. More effective engagement of Indigenous, recreational and commercial fisheries representatives with Commonwealth fisheries management processes.

Educational materials and lessons learnt during Project 2017-069 will be used as the starting point for the DAWE project. It is hoped that Outcome 3 of the DAWE project will address, to some extent, the need to further develop constructive two-way discussion and consultation processes responsive to meaningful involvement of Indigenous people in contemporary fisheries management and governance. Although mentoring was introduced during the current project to encourage effective Indigenous participation in fisheries management, it was not sustained. Further input and development of a mentoring program could assist in ongoing capacity-building.

**Table 4. Principles 5 and 6 of IRG's eleven key RD&E principles**

Principle	Context	RD&E outputs that will assist end-users to
<b>Principle 5</b>  <b>RD&amp;E that - Leads to Improved Capacity That Empowers Aboriginal and Torres Strait Islanders</b>	To lead to increased commercial opportunities and management roles for Aboriginal and Torres Strait Islander people arising from resource use and access.	<ol style="list-style-type: none"> <li>1) Protect Aboriginal and Torres Strait Islander rights as part of resource use</li> <li>2) Develop and start new commercial initiatives that maintain ongoing interests and concerns in the fishing and seafood industry</li> <li>3) Link Aboriginal and Torres Strait Islander community small business aspirations</li> <li>4) Identify investment opportunities, including benefit sharing resource agreements e.g. Indigenous Land Use Agreements</li> <li>5) Empower Aboriginal and Torres Strait Islander communities through development of social capital</li> <li>6) Improve commercial performance through culturally appropriate and innovative business management solutions</li> <li>7) Develop community capacity and involvement, including an understanding of mainstream sciences and management processes</li> <li>8) Formally upskill Aboriginal and Torres Strait Islander people to increase employment and engagement opportunities</li> <li>9) Develop long-term employment strategies, including within agencies and for regional communities</li> <li>10) Develop indigenous solutions to indigenous opportunities.</li> </ol>
Principle	Context	RD&E outputs that will assist end-users to
<b>Principle 6</b>  <b>RD&amp;E that - Leads to Agencies Developing Capacity to Recognise and Utilise Aboriginal and Torres Strait Islander Expertise, Processes and Knowledge</b>	To ensure Government, as part of its responsibility to consult and engage with Aboriginal and Torres Strait Islander people on resource use, undertakes such discussions in a supported and culturally appropriate way.	<ol style="list-style-type: none"> <li>1) Develop strategies that lead to higher levels of Aboriginal and Torres Strait Islander employment in key agencies – across all industry sectors and occupations</li> <li>2) Incorporate traditional fishing knowledge and traditional fishing management practices with the mainstream</li> <li>3) Develop two-way discussion and consultation processes that align with Aboriginal and Torres Strait Islander cultural needs and norms</li> <li>4) Put in place policies and regulations that are cognisant of the cultural needs of Aboriginal and Torres Strait Islander clients</li> <li>5) Ensure that Aboriginal and Torres Strait Islander people are involved in and have representation on all appropriate committees, and are resourced appropriately</li> <li>6) Build relationships with Aboriginal and Torres Strait Islander clients</li> <li>7) Assist in building Aboriginal and Torres Strait Islander capacity.</li> </ol>

## Project Materials Developed

As required, a range of educational materials was developed as part of this project to support capacity-building of Indigenous Australians in fisheries management and assessment. Depending on its use and audience, this material includes both high-level general information and detailed information on particular aspects of Australian fisheries and Indigenous involvement. These educational materials are available from the following URLs.

PowerPoints: see [www.fishwell.com.au](http://www.fishwell.com.au) and follow the Capacity Building prompts.

### Videos

1. Introducing the traditional owners – building indigenous capacity in fisheries  
<https://vimeo.com/447646692/6bb33b7a83>
2. Population Dynamics - building indigenous capacity in fisheries  
<https://vimeo.com/447648412/7fc6d87a91>
3. Stock Assessments - building indigenous capacity in fisheries  
<https://vimeo.com/447650587/657cc6fe7f>
4. Fisheries Management - building indigenous capacity in fisheries  
<https://vimeo.com/447652406/d47fa6b446>
5. Meeting formalities - building indigenous capacity in fisheries  
<https://vimeo.com/447656582/8f262897a3>
6. Getting involved - building indigenous capacity in fisheries  
<https://vimeo.com/447659203/c3b97b7d0c>

One-pagers: see [www.fishwell.com.au](http://www.fishwell.com.au) and follow the Capacity Building prompts.

## Extension and Adoption

Outputs from the project will be available in the public domain at the URLs in the previous section or from [www.fishwell.com.au](http://www.fishwell.com.au) (follow the Capacity Building prompts). This project was highlighted in the FRDC's FISH magazine in Volume 27-3.

The main outcome from this project is the increased capacity of 40 Indigenous Australians (including the TSRL workshop) to engage in fisheries-related meetings and to participate in the fisheries management process (including access and allocation). Workshop participants have also been connected with mentors and a network of peers that they can use for ongoing support during their careers.

Project materials developed can be used for other programs including the recreational fishing next generation of leaders program, the National Seafood Industry Leadership Program, the Australian Rural Leadership program, and the Department of Agriculture, Water and the Environment project to develop and deliver training activities to Indigenous, recreational and commercial fisheries representatives.

In essence, this is a large extension project having developed a workshop program supported by targeted PowerPoints, videos and one-pagers to help increase capacity of Indigenous stakeholders and the broader Indigenous community to improve two-way understanding and to foster Indigenous involvement and input into fisheries management, assessment and policy development.

## **Appendix 1 – Intellectual Property**

There were some Intellectual Property issues that have arose relating to this project. The TSRA wanted to run a similar workshop to that of the IRG, but there were conditions in the standard TSRA contract that could have jeopardised IRG ownership of the Intellectual Property. Ultimately, the issue was resolved by Fishwell Consulting being contracted to the FRDC to conduct the TSRA workshop with amended IP conditions relating to existing material.

## Appendix 2 – Video interview outline

### **Background**

Tell me about yourself, your family and your community?

Tell me about your Country and your relationship to it?

Tell me about your totemic spirituality?

How important is fishing generally to your community?

### **Catching your main fish species**

What are the main species you fish for and how do you do it?

How many ways do you catch fish?

How do you decide when and where to fish?

How do you determine what fish you catch and keep?

Do you notice times or places when it is harder to catch the fish? What do you think causes that?

### **Understanding your fish populations**

Explain your understanding of their age and growth

Explain your understanding of their spawning and reproduction

Explain your understanding of their movements

What does the fish eat and what eats it?

Has there been times / conditions where this population has been low?

What caused it and what fixed it?

What indicators tell you about the health of the fish population?

Explain your understanding of the relationship between this fish and its broader environment

How did you get to know all of this information?

How important is a sustainable fishery?

How do you ensure you fish sustainably?

### **Using your fish**

How would you usually process this fish?

How do you usually prepare the fish?

Is it for everyday use or only on special occasions?

How do you divide this resource up amongst your family and other aboriginal communities?

### **Decision making processes**

How do you make decisions about managing fish?

How do you reach agreement on resources that extend outside your sea country?

Is there a formal meeting process?

How do you ensure compliance with your management decisions?

How do you resolve conflicts?

### **Inter-sectoral views**

How do you feel about giving other groups (commercial and recreational) access to your sea country?

How do you feel about sharing fish with non-indigenous commercial and recreational users?

How do you feel about the recreational sectors that catch the same fish?

How do you feel about the commercial sectors that catch the same fish?

### **Contemporary vs cultural management**

What do you think are the main similarities between contemporary and cultural management of fisheries?

What do you think are the main differences between contemporary and cultural management of fisheries?

How well do you think they can be integrated?

### **Your main issues and messages**

What are the main issues / messages you would like to get across to young indigenous people that want to get more involved in fisheries / management forums?

What are the main issues / messages you would like to get across to non-indigenous people involved in fisheries / management forums?

## Appendix 3 – Example Powerpoint



### Harvest Strategies



What you will learn:

- What are the key elements
- What is in a harvest strategy
- Reference points and performance indicators
- Commonwealth harvest strategy
- Examples harvest strategies in Torres Strait

### Harvest Strategies

A harvest strategy should:

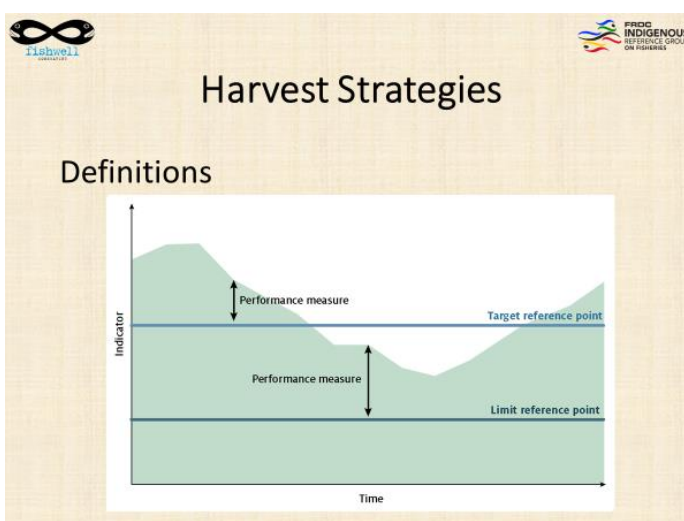
- Be easy to understand
- Be unambiguous
- Make sense
- Be precautionary




## Harvest Strategies

Six Key Elements

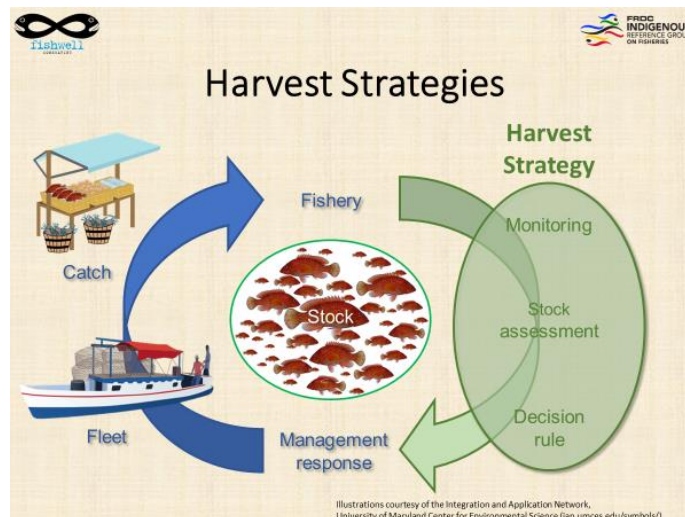
1. Objective(s) – what you are trying to achieve
2. Reference Points – benchmarks
3. Indicator(s) – what you measure
4. Performance measure(s) – how you are tracking
5. Decision Rules – how you will react
6. Meta Rules (Exceptional Circumstances) – for when the unusual happens





## Example - fishery


1. Objective: Keep fishery sustainable and profitable
2. Reference Point: Fishing mortality  $\leq$  a target
3. Indicator: Current level of fishing mortality
4. Performance measure: How close to target
5. Decision Rule: Increase/decrease catch
6. Meta Rule: e.g. If bad signs in other indicators then further reduce the catch



### Harvest strategy - components

Monitoring + Assessment + Decision rule


- Monitoring ✗
- Assessment ✗
- Decision Rule ✗
- Fisheries management is "flying blind"
  - No idea what is happening
  - Doesn't know what it means
  - No informed way to respond




### Harvest strategy - components

Monitoring + Assessment + Decision rule

- Monitoring ✓
- Assessment ✗
- Decision Rule ✗
- Can see what is happening
  - Does not know what it means
  - No informed way to respond







## Harvest strategy - components

Monitoring + Assessment + Decision rule

- Monitoring ✓
- Assessment ✓
- Decision Rule ✗

- Can see what is happening
- Knows what it means
  - No informed way to respond





## Harvest strategy - components

Monitoring + Assessment + Decision rule

- Monitoring ✓
- Assessment ✓
- Decision Rule ✓

- Can see what is happening
- Knows what it means
- Has tools needed to respond







It's not that easy.....



## Defining some terms - defaults

- **Biomass (B)** is the total weight of fish (usually of spawners but has to be defined)
- **Fishing mortality rate (F)** is a particular form of an exploitation rate
- **Target reference point** ( $F_{TARG}$  or  $B_{TARG}$ ) is an exploitation rate or biomass to be aimed for
- **Limit reference point** ( $F_{LIM}$  or  $B_{LIM}$ ) is an exploitation rate or biomass to be avoided
- **Exploitation rate** is the fraction of the available stock that is caught ( $=C/B$ )





## Defining some terms - defaults

- **Limit reference point**
  - To be avoided
  - $B_{LIM} = 20\%$  original biomass
  - May be higher for important food chain spp
  - $F_{LIM} =$  High effort level that will reduce biomass beyond 20% original biomass
- **Target Reference Point**
  - $B_{TARG} = 48\%$  original biomass is an  $F_{TARG}$  exploitation rate or biomass to be aimed for



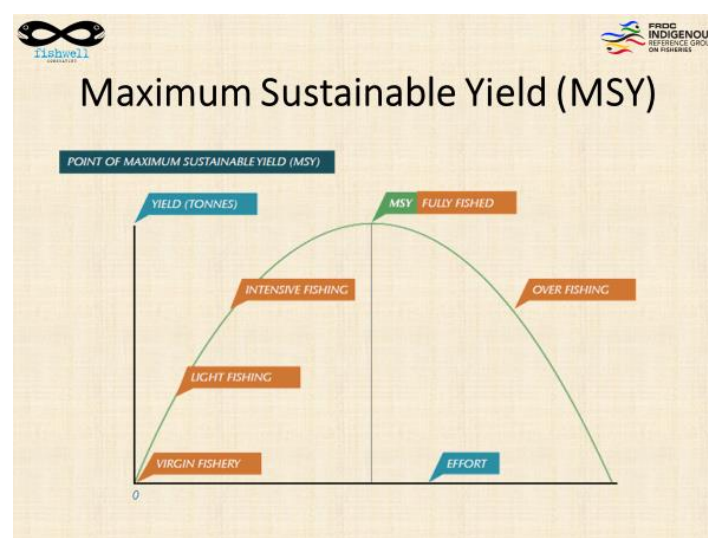

## Defining some terms - defaults



- **Target Reference Point**
  - Biomass above  $B_{MSY}$  (Default  $B_{MSY} = 40\%$ )
  - $B_{TARG} = 48\%$  original biomass ( $1.2 \times B_{MSY}$ )
  - $F_{TARG}$  exploitation rate that reduces biomass to 48% original biomass
  - Only have biomass estimates from Tier 1 or 2 assessments
  - Proxies need to be developed for species without formal assessments.



## Maximum Sustainable Yield (MSY)



- Calculating MSY used the following data
  - Biological characteristics of the fish stock
    - Growth
    - Mortality
    - Recruitment
  - Revenue





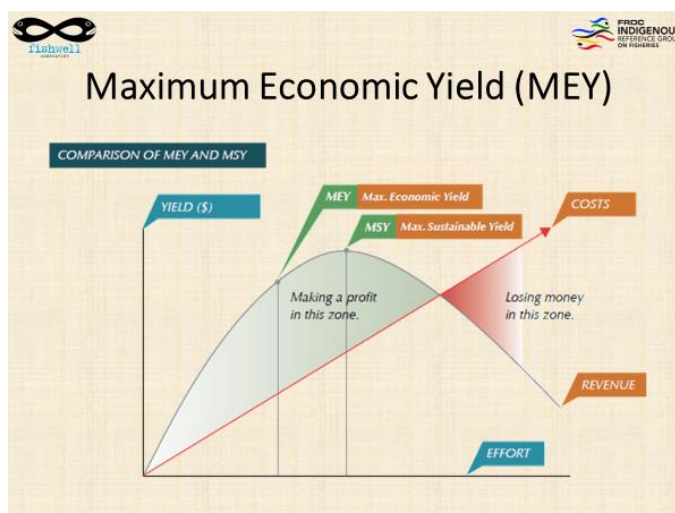
## Maximum Sustainable Yield (MSY)

- Theory developed in the 1950s
- The modelling was based on real life observations and experiments
- Seeks to find the highest long term catch that can be taken from a fish stock at **sustainable** levels
- But the problems with MSY include:
  - Fish stocks fluctuate with environmental conditions
  - It only considers revenue, not costs
  - It is sensitive to political pressure



## Maximum Economic Yield (MEY)

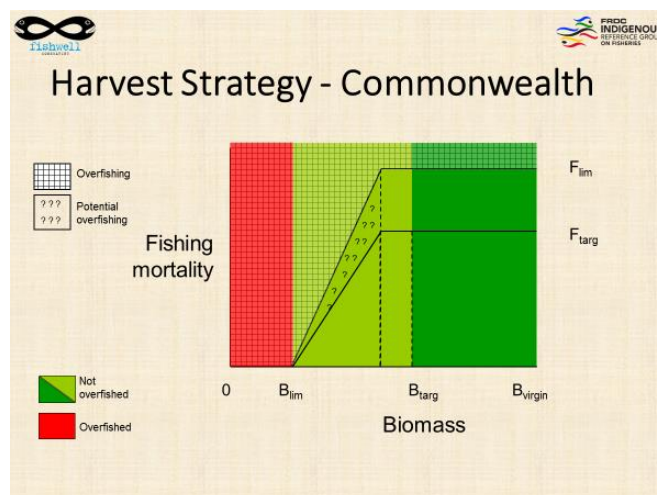
- Calculating MEY uses the data used for MSY
  - Biological characteristics of the fish stock
    - Growth
    - Mortality
    - Recruitment
  - Revenue
- As well as
  - Costs
  - Catch and effort





## Harvest Strategy

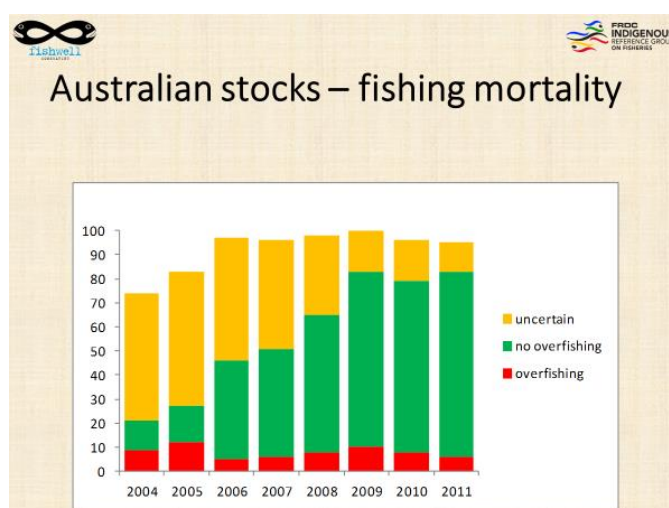
### Australian Commonwealth Fisheries

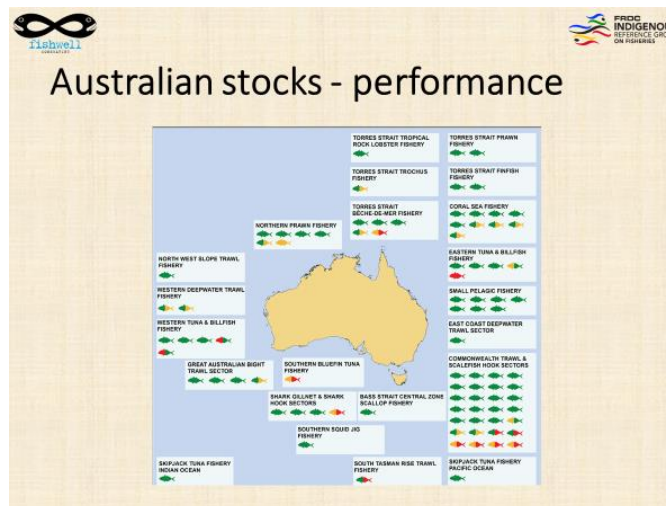
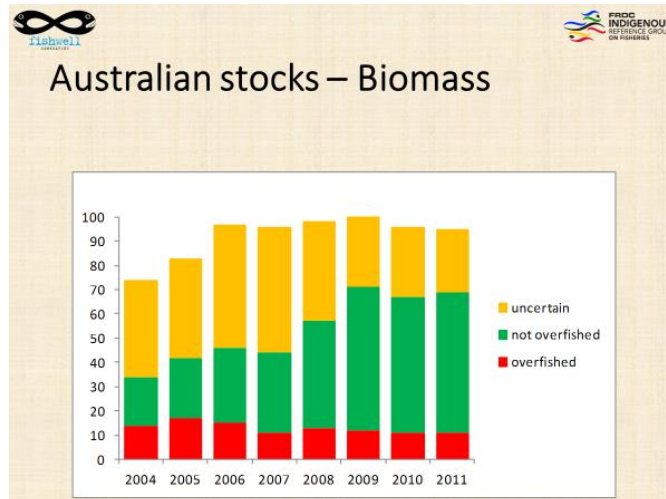


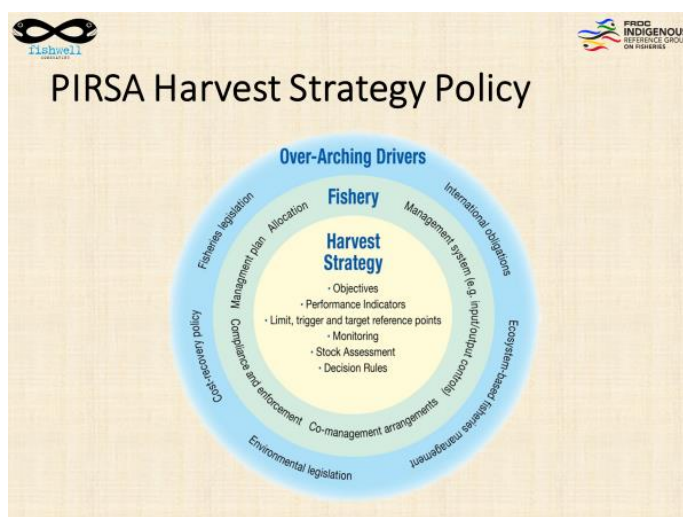
### Harvest Strategy - Commonwealth

Applies to key commercial species

- Target reference point
  - Stock biomass ( $B_{targ}$ ) required to produce maximum economic yield from the fishery ( $B_{MEV}$ )
  - Fishing mortality ( $F_{targ}$ ) that results in biomass depletion to 48 % of the unfished biomass.
- Limit reference point
  - All stocks must be maintained above their biomass limit reference point ( $B_{lim}$ ) >90 % of the time
  - Fishing mortality point ( $F_{lim}$ ) above which the removal rate from the stock is too high and will result in the stock falling below  $B_{lim}$







## Harvest Strategy – Pipi (Kuti)

**Goal**

- Ensure that the Pipi fishery is fished on a sustainable basis in accordance with the objects of the Fisheries Management Act 2007

**Objectives:**

- Pipi relative biomass above the target reference point of 11 kg/4.5 m<sup>2</sup> and not less than the trigger reference point of 9 kg/4.5 m<sup>2</sup>.
- Pipi relative biomass does not drop below the limit reference point of 4 kg/4.5 m<sup>2</sup>.
- To maximise Fishery Gross Margin

## Harvest Strategy – Pipi (Kuti)

Achieve these objectives via the following strategies:

1. Maintain sustainable stock with appropriate TACC.
2. Sustainability of the Pipi fishery.
  - Management decisions responsive to relative abundance.
3. Improved business certainty and viability.
  - Implement decision rules to provide greater TACC certainty
  - TACC only altered in years when conditions significantly changed
  - Facilitate structured industry input into the decision making
4. Profitability a. TACC that maximises returns for the fishery within biologically sustainable limits



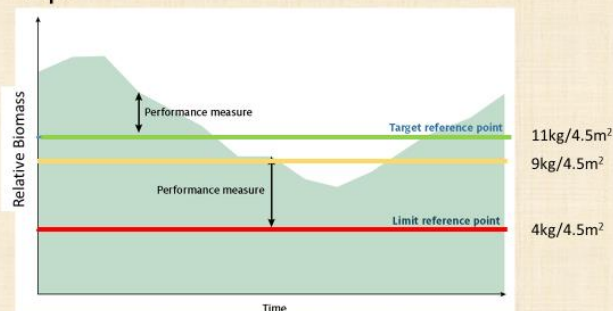
## Harvest Strategy – Pipi (Kuti)

- Decision making Framework
- Step 1 uses biological performance indicators to assess the current status of the Pipi fishery.
- Step 2 uses price and economic data over a range of sustainable TACC levels
  - Opportunity for industry to provide input on the impacts of external factors on expected future prices
- Step 3 uses reference points and decision rules to guide the TACC setting process to ensure the Pipi resource is harvested within ecologically sustainable limits and also to maximise economic returns



## Harvest Strategies

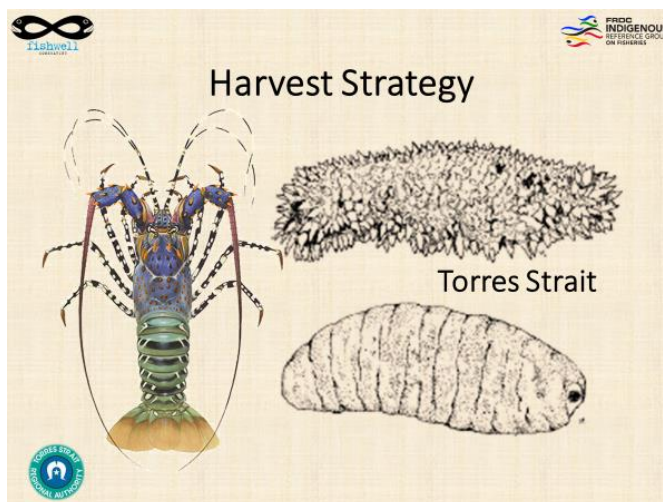
### Pipi



## Harvest Strategy – Pipi (Kuti)

### Additional performance measures

1. Catch vs TACC
2. CPUE (fishery dependent)
3. Pre-recruit relative abundance index (to be developed)
4. Seasonality and spatial abundance



TRL Harvest Strategy

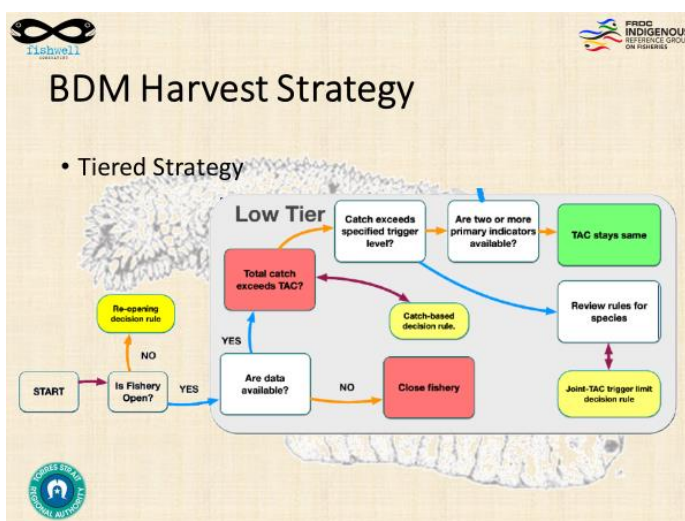
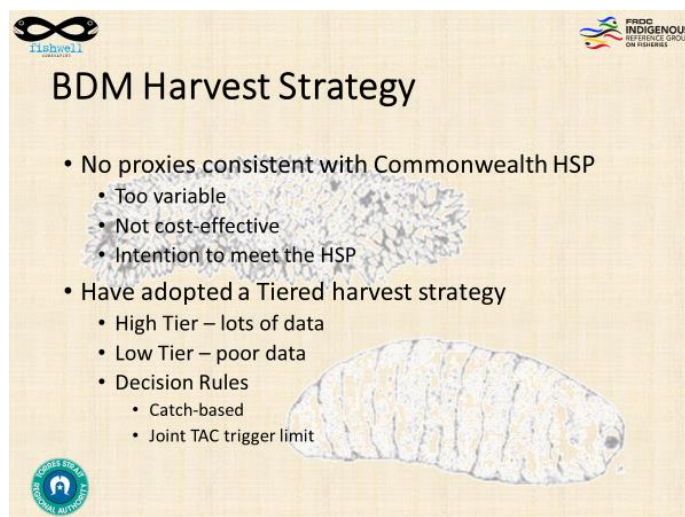
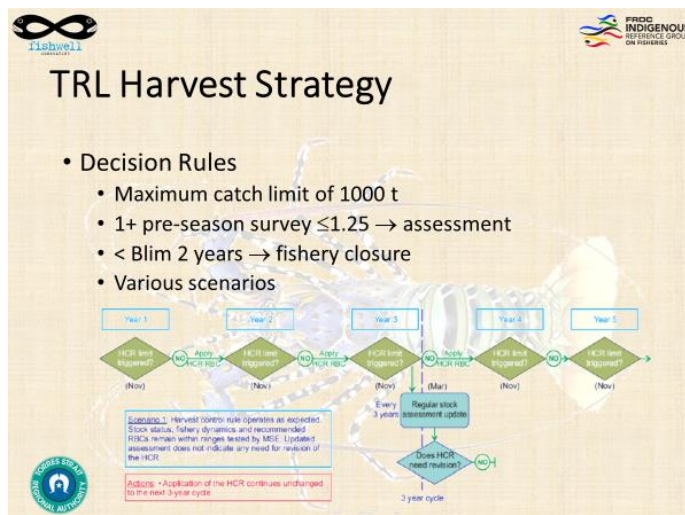
- Target reference point
  - $B_{TARG}$  is the spawning biomass level equal to recent levels (2005-2015)
  - $B_{TARG} = 0.65 B_0$
  - $F_{TARG}$  is the estimated level of fishing mortality rate that maintains the spawning biomass around  $B_{TARG}$
  - $F_{TARG} = 0.15$
- Limit reference point
  - $B_{LIM}$  is the spawning biomass level below which the risk to the stock is unacceptably high
  - $B_{LIM} = 0.32 B_0$

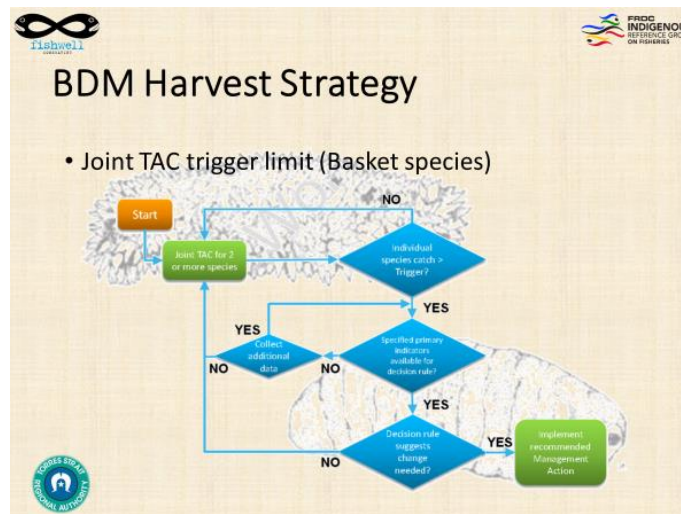
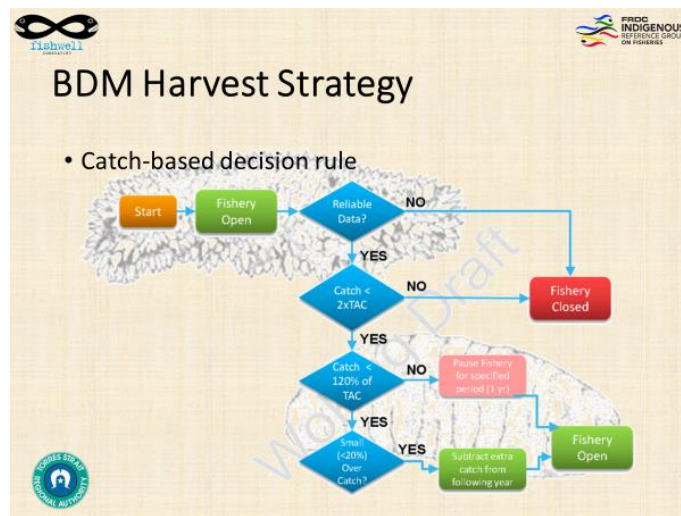
The slide has a background image of a crayfish. Logos for Fishwell Consulting, Torres Strait Fisheries, and the FRDC Indigenous Reference Group are visible in the corners.

TRL Harvest Strategy

- Monitoring
  - TIB catch and effort data
  - TVH catch and effort data
  - Fishery independent surveys (pre-season / mid-season)
  - Catch sampling (size frequency / sex ratio)
- Assessment
  - Formal quantitative assessment
  - Empirical harvest strategy

The slide has a background image of a crayfish. Logos for Fishwell Consulting, Torres Strait Fisheries, and the FRDC Indigenous Reference Group are visible in the corners.





**Harvest Strategies**

What have you learned:

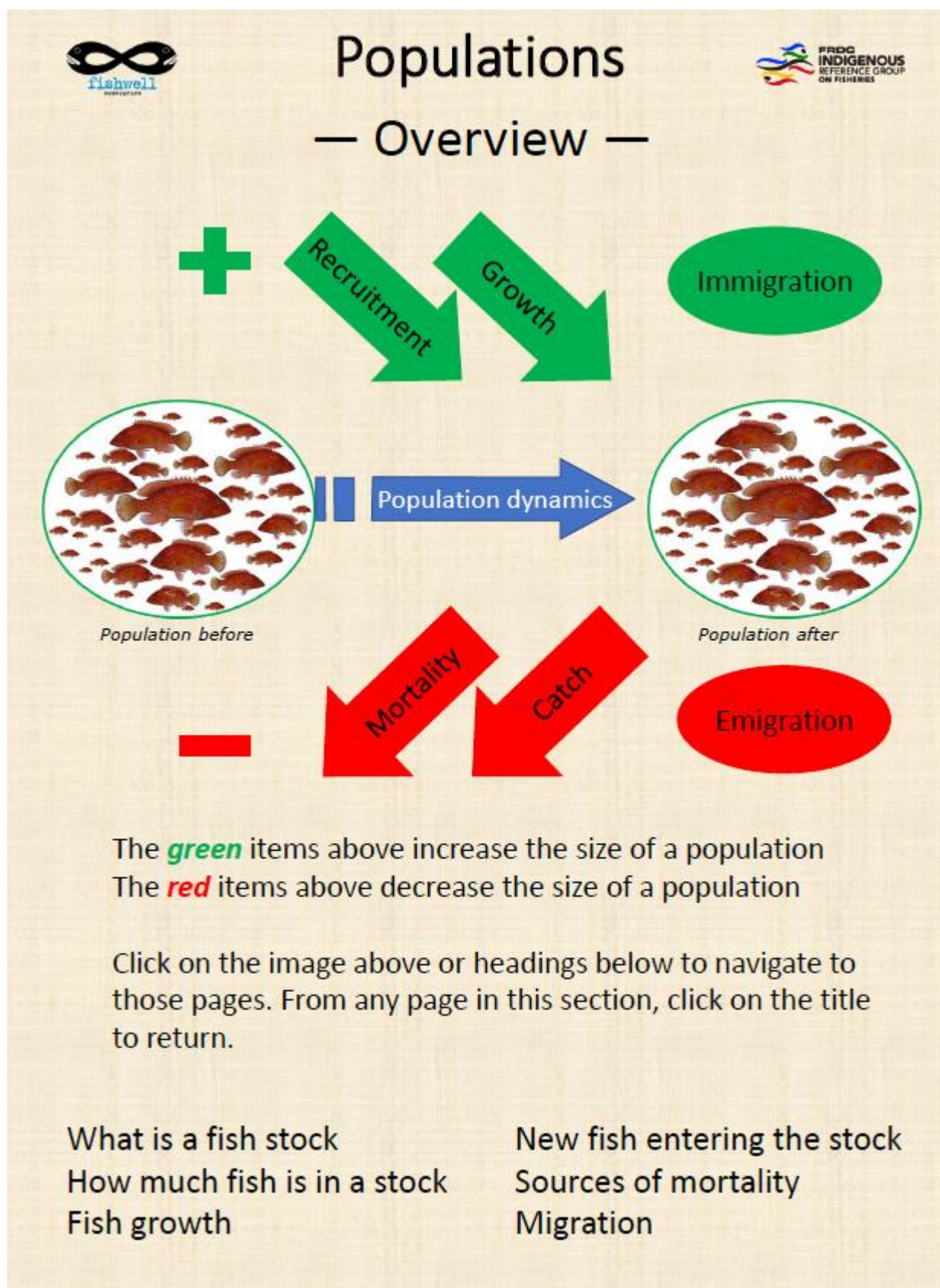
- What are the key elements
- What is in a harvest strategy
- Reference points and performance indicators
- Commonwealth harvest strategy
- Examples harvest strategies in Torres Strait



Ian Knuckey  
[ian@fishwell.com.au](mailto:ian@fishwell.com.au)  
[www.fishwell.com.au](http://www.fishwell.com.au)  
<http://www.youtube.com/user/FishwellConsulting>

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## Appendix 4 – Example “1-Pager”





# Populations



## Simple concept – complex words

**These things change the size of a fish population**

### **Things that make a population go up:**

- New groups of young fish that enter [Recruitment](#)
- Fish growing in length and weight [Growth](#)
- Fishing coming from another place [Immigration](#)

### **Things that make a population go down:**

- Fish dying of old age or being eaten [Natural mortality](#)
- The catch taken by people fishing [Fishing mortality](#)
- Fishing leaving to go to another place [Emigration](#)

### **Other words to describe fish populations:**

- The unit of a fish population that we manage [Stock](#)
- The weight of fish in a stock [Biomass](#)
- The portion of a stock caught by fishing effort [Catchability](#)
- How big a fish is for a given length [Length-weight](#)
- The changes that occur to a fish in its life [Life-cycle](#)
- How many eggs a female can carry [Fecundity](#)

# Appendix 5 – IRG Workshop 1

Agenda May 2019



## Indigenous Capacity Building Workshops

### Day 1 – Morning

#### Welcome to Country

#### *Introducing the workshop and participants*

Participants introduce themselves as they would prefer to at any meeting.  
Open forum but needing to cover off on

- Name,
- Country
- Fishery experiences
- What you want to get out of the workshop

#### Meeting Protocols

#### *Standard introductions for Non-Indigenous fora*

- How introductions happen (initial and consequent meetings)
- How Fisheries Management meetings handle introductions
- Participants to develop a culturally appropriate check list for themselves and others who they would encourage to participate in a fisheries management forum.

#### *Meeting Principles*

- Understanding Terms of Reference
- Defined membership, roles and responsibilities
- Transparent and open processes
- Dealing with conflicts of interest
- Behaviour
  - Discrimination
  - Honesty, courtesy and respect
  - Duty of care
- Advice / decisions that pursue legislative and policy objectives;
- Decision making (Consensus or voting?)

#### *Meetings – the formal processes*

- Pre-meeting preparation and expectation
- Review of actual meeting materials
  - Agenda
  - Conflicts of Interest
  - Papers
  - Minutes
- Video example of meeting procedures?

*Participants to develop a culturally appropriate check list for themselves and others to participate in a fisheries management forum.*

## Indigenous Capacity Building Workshop

### Day 1 – Afternoon

### Fishery Populations

#### *Fishery Population Dynamics*

- Reproduction
- Recruitment
- Growth
- Mortality
- Yield / MSY / MEY

#### *Fisheries Data*

##### Fishery dependent data

- Logbooks (Catch and Effort)
- VMS
- Economic data
- Social data

##### Fishery Independent data

- Surveys
- Oceanographic data

#### *Stock Assessment Methods*

Types of assessment (e.g. Tier system as example)

Data poor assessments –

- Types and how they work (including tools used)
- Catch rate standardisation (in focus)

Data rich assessments – how they work (including tools/types)

- Biomass focussed
- Bio economic (MEY)

*Participants to develop a culturally appropriate check list for themselves and others to participate in a fisheries management forum.*

## **Indigenous Capacity Building Workshop**

### **Day 2 – Morning Meeting Protocols**

#### ***Communication in Meetings – speaking and listening***

- Who speaks when and why?
- Who listens when and why?
- What are the cultural differences and how can Indigenous members understand the process and what can the non-Indigenous members understand?
- The written agenda. What does this look like? What do the parts mean and members responses and responsibilities to agenda items?
- The hidden agenda – what happens before the meeting to get organised and be a representative and what can happen during the meeting to get items “signed off”
- How to get your knowledge and opinions onto the table and into the discussion...how non-Indigenous people do it? How might Indigenous people do this.

#### ***Attending and participating in meetings***

- How do the participants have meetings (work/community/family) and how to you know what is going to be talked about?
- What do participants need to do at meetings to be an active/engaged member of the group?
- Expectations of attending and participating in a meeting

***Participants to develop a culturally appropriate check list for themselves and others who they would encourage to participate in a fisheries management forum.***

## **Indigenous Capacity Building Workshop**

### **Day 2 – Afternoon**

#### **Fishery Management Frameworks**

##### ***Contemporary Fisheries Management Frameworks***

- International instruments
  - FAO CC, UNSFA, UNCLOS, IPOAs
- Commonwealth / State approach
  - Fisheries Management Act
  - ESD and EPBC and EBFM
  - Harvest Strategy Policy and Bycatch Policy
- Harvest strategies
  - Objective, Target and Limit Ref points, Indicators,
  - Performance measures and Decision rules
  - Feedback loops, management responses, MSE

##### ***Co-existence of cultural and contemporary fisheries management***

- Facilitated Discussion

##### ***Content of Fisheries Management Meetings***

- What information is shared and discussed? What decisions are made?
- What knowledge do the meeting members bring to the table?
- How is this knowledge shared – papers, presentations, agenda items, discussions.
- How can Indigenous members have their input – how often do people try to have their voices heard. How do you get your opinion heard?
- What will Indigenous members bring to the decision-making?

### **Day 2 – Evening**

#### **Program Networking Dinner**

***Spend time with the local or regional or state Fisheries Management decision-makers.***

##### ***Participants (3) to present***

- who you are and the knowledge of fisheries management that you bring to the decision-making space.

## Indigenous Capacity Building Workshop

### Day 3 - Morning

#### Leadership

##### *Communication*

- Understanding communication
- Understanding how to have indigenous voices heard

##### *Personalities*

- What are the fundamentals
- How does this impact and where can it be seen and
- How should indigenous ways of working be incorporated

##### *Teams*

- What are teams and how do they function
- What key elements of indigenous ways of working need to be communicated for full participation to occur

##### *Conflict*

- How conflict is managed
- How individuals respond to conflict

##### *Time-management*

- Principles of time management
- Areas to consider when working across the seafood industry/community

##### *Interviews and public responses*

- How to be a spokesperson
- Getting your message across
- What the wider seafood industry must understand.

### Day 3 - Afternoon

#### Mentoring

## Participant feedback from Workshop 1

Fisheries Content	Fisheries Delivery
<ul style="list-style-type: none"> <li>• I would like more of this kind of session to help aboriginal and Torres strait islander understand for of what the fisheries trying to do.</li> <li>• The workshop was a very good and interesting. I enjoyed it all.</li> <li>• Eye opener I have learnt a lot in how, why to these exercises in monitoring fish/crustacean stock and to have someone else entering or call a upon with expertise in that area to mentor</li> <li>• Very well.</li> <li>• Too long and heavy in content</li> <li>• I was well informed on the key concepts but would have liked more on legislation, roles of peak bodies and maybe a quick overview of the current climate of the fisheries industry</li> <li>• The content of the topic was very good which is relevant to assist with my work.</li> <li>• Very good on the equations and statistical side of how all species are determined. Absolutely mind blowing but at the same time simple too. Would like more case studies to relate to this information so that it can be tailored to individuals.</li> <li>• Great just compacted it all into a little time frame instead of stretching it out over a full week</li> </ul>	<ul style="list-style-type: none"> <li>• Face to face on ground delivery</li> <li>• Happy with the way it all going.</li> <li>• Like to see policies surrounding Aborigines</li> <li>• Really good.</li> <li>• It was fine but needed cultural content</li> <li>• In relation to flexibility of delivery Ian adjusted to the needs of the group extremely well changing and adding content that helped support the learning space</li> <li>• The delivery of the program was very well presented.</li> <li>• It was great particularly again around the science and stats. Would be good for jurisdictional information particularly relating to a certain species.</li> <li>• Great delivery very enthusiastic</li> </ul>

Meetings Content	Meetings Delivery
<ul style="list-style-type: none"> <li>• Should have protocol template to follow.</li> <li>• Very good</li> <li>• In house rules</li> <li>• Not bad.</li> <li>• More info before meeting, possibility a conversation as well.</li> <li>• The content of the meeting protocols was very helpful to support in what I do.</li> <li>• Really good, got me thinking of how I approach meetings and what are the key themes or areas that I focus on. It was also good to hear from other about their thoughts and approach.</li> <li>• Good content and good information around the topic</li> </ul>	<ul style="list-style-type: none"> <li>• Invited someone from the area to do welcome</li> <li>• Very good</li> <li>• All good</li> <li>• Good</li> <li>• Very heavy in content and social mapping</li> <li>• Good activities and discussions What would have been complimentary was info booklet or the like as a reference</li> <li>• Very well delivered.</li> <li>• Good discussions and role playing i thought this showed how we used those skills and knowledge in a role play.</li> <li>• Great delivery</li> </ul>

Leadership/Mentoring content	Leadership/Mentoring delivery
<ul style="list-style-type: none"> <li>• Mentoring best people should from outside your comfort space</li> <li>• Very good</li> <li>• Improvement can be made during training</li> <li>• Very good.</li> <li>• Thought it was ok but too tired to engage properly.</li> <li>• The content is very helpful to assist in my role.</li> <li>• Always like to discuss leadership and how I've been able to assess myself or other I would like to have in my pool of supporters.</li> <li>• Great content</li> </ul>	<ul style="list-style-type: none"> <li>• Best to have mentoring outside of you work place or community.</li> <li>• Very good</li> <li>• Can vary depending on situations</li> <li>• Very good.</li> <li>• Same as above.</li> <li>• Very well presented on the topics.</li> <li>• Would good to look at good examples of mentoring and seeing the outcomes.</li> <li>• Great delivery which sparked good conversations</li> </ul>

Workshop productivity	Comfort sharing opinions
<ul style="list-style-type: none"> <li>• Was interesting</li> <li>• I have had a lot of exposure to the content so somewhat irrelevant.</li> <li>• More interaction in discussion</li> <li>• Very productive</li> <li>• Making that first encounter with the group and networking</li> <li>• I think it was just good to mix all indigenous from all walk of life.</li> <li>• Lost its momentum due to long session between breaks</li> <li>• The content and the needs of the participants were a little askew</li> <li>• I thought the content of the meeting was very good because it was relevant to assist in my role in fisheries.</li> <li>• It is not seen as important to provide us with information to empower us to discuss at the policy and decision-making level in regards to species and TAC's, I now know I can put across a valid argument into the fisheries meetings and feel confident.</li> <li>• We were all engaged to the topic</li> <li>• The second day seemed more productive to me, due to content.</li> <li>• I feel there needs to be some form of criteria/EOI to ensure the content is pitched at the right level. Additionally, to build capacity in fisheries I believe there needs to be some form of reference to legislation and policy.</li> </ul>	<ul style="list-style-type: none"> <li>• Very interesting sharing information this will help fisheries or fishermen move forward</li> <li>• I felt that if was very comfortable.</li> <li>• Sharing to see what others too are sharing and learn off each other experiences</li> <li>• Wasn't too sure most of the time. Was my first time and yeah bit hard to understand what was going on.</li> <li>• Depended on the group</li> <li>• Culturally safe in that I was with my people and not a minority</li> <li>• I found sharing my opinion on the topic discuss also helped the other group.</li> <li>• It was an environment that I felt was safe and supportive and we were able to share our own stories that were relevant to us.</li> <li>• Because you're surrounded by people of the same interest and culture</li> <li>• I felt comfortable enough to share opinions, though felt the need to just listen due to knowledge of others within the room.</li> <li>• Friendly/welcoming environment created.</li> </ul>

## Additional General Feedback

- All good thanks
- Very good
- My first but not my last, I love it thanks Ian/Jill
- All in all, as a first attempt it captured a lot of data and pulled out relevant info and put a basic foundation down for future delivery. I personally enjoyed the workshop.
- Necessary to have an Indigenous co facilitator
- I think the presenters did very well but maybe an information folder for each participant to have would be good.
- Great work Ian and Jill, very nice to meet you guys and this is valuable and see it as great tool for my mine and other mobs.

- More frequent breaks. I felt like some of the sessions went too long.
- Very relevant content. As a pilot I thought it was run well. Tightening a few screws in regards to understanding the group prior to the workshop would benefit the presenters and the group hugely. I strongly believe that there needs to be some form of criteria/EOI/strong recommendation (ensuring capabilities) so that it can be pitched at that level. If the IRG are wanting the group to go back to community with the skills and development there needs to be more relevant and direct information relating back to community which would allow the group to put it in a real-life scenario - hope that makes sense. Much appreciated Ian and Jill.

# Appendix 6 – IRG Workshop 2

Agenda February 2020



## IRG Fishery Capacity Building Workshop 2 Tauondi Aboriginal College, 1 Lipson St, Port Adelaide 4-6 February 2020

Approximate Time	Session	Facilitator
<i>Day 1</i>		
<b>Pre-start</b>	Coffee and Informal gathering	N/A
<b>9.30am</b>	Welcome to Country <a href="https://millerapartments.com.au/">https://millerapartments.com.au/</a>	Uncle Jack
<b>10.00am</b>	Why capacity building and where it fits- higher level and IRG & FRDC	Ian Knuckey
<b>10.15am</b>	My Experience	Delahay Miller
<b>10.45am</b>	Morning Tea	
<b>11.15am</b>	Introductions Participants introduce themselves – however you feel most comfortable. <ul style="list-style-type: none"> <li>Who you are / Clan / Community?</li> </ul> AND <ul style="list-style-type: none"> <li>State/Region</li> <li>Fisheries experience. What do you want from this workshop?</li> <li>Involvement in Industry Boards/Committees/Meetings</li> </ul>	Jill Briggs
<b>12.30pm</b>	Lunch	
<b>1.30pm</b>	<ul style="list-style-type: none"> <li>Understanding the language of fisheries science</li> <li>Understanding                             <ul style="list-style-type: none"> <li>graphs</li> <li>Symbols</li> <li>Equations</li> </ul> </li> <li>Scientific method</li> <li>Stock Assessment</li> <li>Harvest Strategy</li> </ul>	Ian
<b>3.00pm</b>	Afternoon Tea	
<b>3.15pm</b>	Successful Meetings – Your Knowledge <ul style="list-style-type: none"> <li>Structure</li> <li>Purpose</li> <li>Roles and Responsibilities</li> <li>Outcomes and Action</li> </ul>	Jill
<b>5.00pm</b>	Review and Close	Jill
<i>Day 2</i>		
<b>9.00am</b>	Checking in and Orientation to Day 2	Jill
<b>9.15am</b>	Fishery Population Dynamics <ul style="list-style-type: none"> <li>Reproduction</li> <li>Recruitment</li> <li>Growth</li> <li>Mortality</li> <li>Yield / MSY / MEY</li> </ul>	Ian
<b>10.45am</b>	Morning Tea	

11.00am	Meeting Principles <ul style="list-style-type: none"> <li>• TOR</li> <li>• Membership – roles and responsibilities</li> <li>• Transparency</li> <li>• Conflict of Interest</li> <li>• Behaviour – Discrimination, Respect, Duty of Care</li> <li>• Decision-making and Action Processes</li> </ul>	Jill
12.30pm	Lunch	
1.30pm	Fisheries Data and Stock Assessment <ul style="list-style-type: none"> <li>• Fishery-dependent data</li> <li>• Fishery-independent data</li> <li>• CPUE as an index of abundance</li> <li>• Data rich / poor assessments</li> </ul>	Ian
3.00pm	Afternoon Tea	
3.30pm	Leadership in Meetings <ul style="list-style-type: none"> <li>• Communication Principles</li> <li>• Personalities</li> <li>• Teams</li> <li>• Conflict</li> </ul>	Jill
4.45pm	Tonight, Review and Close	Ian and Jill
6.30pm	Workshop Dinner (venue TBA)	All
<b>Day 3</b>		
9.00am	Check in and key learnings to date	Jill
9.30am	Meetings in Action <ul style="list-style-type: none"> <li>• Roles and responsibilities</li> <li>• Who speaks and their role?</li> <li>• Who listens and their purpose?</li> <li>• How does this translate culturally – what knowledge do you bring to this structure</li> <li>• The agenda and your input – how you get your thoughts onto the agenda</li> <li>• The agenda and how it is followed</li> <li>• Being a representative and your responsibilities and cultural obligations</li> <li>• The Hidden agenda - unknown unknown and outside meetings – what to manage that behaviour.</li> </ul>	Jill
11.00am	Morning Tea	
11.30am	Fisheries Policy and Management Frameworks Harvest strategies <ul style="list-style-type: none"> <li>• Objective, Target and Limit Ref points, Indicators,</li> <li>• Performance measures and Decision rules</li> </ul> International instruments <ul style="list-style-type: none"> <li>• FAO CC, UNSFA, UNCLOS, IPOAs</li> </ul> Commonwealth / State approach <ul style="list-style-type: none"> <li>• Fisheries Management Act</li> <li>• ESD and EPBC and EBFM</li> <li>• Harvest Strategy Policy and Bycatch Policy</li> </ul>	Ian and Del
1.00pm	Lunch	
1.30pm	Putting Learning into Action	Jill and Ian
3.00pm	Reflection and Close	

## Participant Feedback Workshop 2

### How effective was the workshop in building capacity to get involved in contemporary fisheries meetings?

- It was very effective for me going forward in future meetings and more comfortable on what to say.
- The workshop opened up a Pandora box in ways we as a group learnt and activities we participated in, gave a current day and very much grassroots insight as to perhaps, best management practise today, along with the relevance of research, caring for country and water, plus the need for collating and preserving data collected.
- The workshop presenters also offered suggestion of ways in which we may better manage our aquatic life which will come through research and data collected to ensure we are on track to “growing” a sustainable aquatic and inhabitants’ coexistence in this rapidly changing world, and indeed, environment.
- Importantly, traditional cultural practises have been fostered as to has the inclusion of Aboriginal People telling their story as we journey through this life. Preservation of our aquaculture habitat and realisation, that other than being seen as only a food source, cannot be promoted enough.
- Enjoyed the information that was shared
- The diversity within the group and sharing of personal stories and experiences was beneficial
- it was a great presentation
- the workshop was a great couple of days I learnt a lot

### How comfortable did you feel sharing your opinions in the workshop?

- Simple, everyone in the room became friends including the presenters
- Everyone in the group was welcoming to any opinions
- There was a broad mix of people with different experiences so this created for the most part a sense of safety in sharing
- The connectivity between participants was unreal, as if we knew each other and in our previous journey we may well have done.
- I am comfortable with talking to other people
- Ian and Jill had created a very safe environment for sharing opinions and were always open to hearing people's thoughts and feelings.

### How effective was the workshop regarding fisheries?

- There were heaps to learn and picked up more ideas from other students and very effective to me in my future leadership roles
- Perhaps mind blowing, for it's fair to suggest that you started off with a roomful of very passionate community minded individuals that mostly thought they reasonably understood much about the available and maybe, sustainable water/seafood industry, but realistically appeared to know squat.
- Those people that chose to host a workshop at the grassroots level of understanding are to be commended, and to suggest any area in which it may be improved, would be perhaps an undeserved criticism.
- I found the information for fisheries was relevant for the work that I am doing

<b>Fishery delivery</b>
<ul style="list-style-type: none"> <li>I thought the presentation were spot on with good preparation and information</li> <li>That which has been collated, preserved and also shown, indicates a genuine concern, primarily, that Aboriginal People, (the true managers of country and water), have not been excluded, as throughout the workshop, cultural fishing/practises have been a focus and encouraged.</li> </ul>
<b>Meeting protocols - content</b>
<ul style="list-style-type: none"> <li>Just great and easy to pick up the info</li> <li>The workshop commenced with a traditional Welcome to Country as we all acknowledged the country on which we would meet greet and share stuff over a few days.</li> <li>At the commencement, it was obvious that in the coming days we would share experiences dreams and passions, and in traditional form, we would be family. Aboriginal and Torres Strait Island People nurture country and water/sea, and our connection to earth is unrivalled. Community engagement and storytelling from Mob, regarding past and current sustainable fishing practises and how it has been passed on along with acknowledging that communities may do things differently was heartening - as was the understanding of the presenters, that engagement and respect between those different groups, is at the forefront, perhaps as we share a common bond in caring for country and water.</li> </ul>
<b>Meeting protocols - delivery</b>
<ul style="list-style-type: none"> <li>The presenters did a very good job and gave out good information and easy to understand</li> </ul>
<b>Leadership/mentoring - content</b>
<ul style="list-style-type: none"> <li>I picked up a lot of information on leadership with most other students but not all showed leadership</li> <li>Opportunity, from here it is up to the individual but the encouragement was tremendous as was our butcher paper brainwave sessions.</li> <li>I found the content was a little dry but did have some good points.</li> </ul>
<b>Leadership/mentoring - delivery</b>
<ul style="list-style-type: none"> <li>There were a couple of students with great leadership qualities and some students just need to work on a few more skills but I believe every student can get there</li> <li>Follow up required and realistically, the group should have another face to face meeting and this could include, with the participants from the first workshop. Reasoning is not limited to, far too often workshops are held, people are encouraged, get all fired up and going to blaze a trail, only to find the workshop was just perhaps another tick in someone's box with very little to do with what people may have been led to believe it was supposed to represent.</li> <li>Delivery was good</li> </ul>

## Additional general feedback from Workshop 2

<b>Ways to improve the Workshop</b>
<ul style="list-style-type: none"> <li>None - it was a great presentation</li> <li>Not knowing the organisers, and that's not relevant anyway, but delivery of governance could possibly have been delivered in a more appropriate and serious way, as today, more so than ever before, ignorance, pertaining to literacy and numeracy may work against the good intentions of groups or individuals that are seeking support.</li> <li>The workshop was a great couple of days I learnt a lot</li> </ul>

- I think everything went well - my only constructive feedback would be that I think it would be better if the accommodation was closer to the venue of the workshop. Also, potentially having the same person booking accommodation and flights just to ensure everything is booked as needed - fortunately we didn't have many dramas this time but if it was a busier time of year we may not have been so lucky booking another night's accommodation on such short notice. Other than that, I really enjoyed it!

## Appendix 7 – TSRA Workshop



### Induction Workshop Thursday Island 21<sup>st</sup> – 23<sup>rd</sup> May 2019

#### Workshop Outline

The TSRA Member Induction Workshop, facilitated by Ian Knuckey and Jill Briggs ran over three days and consisted of the following main components:

#### **Meetings:**

- *Principles*
- *Formal processes*
- *Communication*
- *THE PZJA framework*

#### **Understanding the language of fisheries science**

- *Graphs*
- *Equations*
- *Parameters*

#### **Leadership:**

- *Communication*
- *Personalities*
- *Teams*
- *Conflict*

#### **Fisheries management:**

- *Fisheries data*
- *CPUE as an index of abundance*
- *Harvest Strategies*
  - *Monitoring*
  - *Stock Assessment*
  - *Decision rules*

#### **Putting what you have learnt into action**

- What will you take back to your community?
- How will you approach your next meeting?
- Feedback from participants
- Next steps?



### Workshop Participants

The following people participated in the workshop with their TSRA roles noted:

Cluster	Island	PZJA Committee Representatives						
		FFWG	FFRAG	TSSAC	TRLWG	TRLRAG	HCWG	PMAC
Inner Western	Thursday			Patrick Mills	Patrick Mills		Tony Salam	
	Horn	Harry Nona				Harry Nona		
Near Western	Moa							
	Badu	Frank Loban		Frank Loban	James Ahmat	James Ahmat	Frank Loban	
	Mabuiag							
Top Western	Saibai							
	Boigu				Aaron Tom	Aaron Tom		
	Dauan	Tenny Elisala	Tenny Elisala	Maluwap Nona			Maluwap Nona	
Central	Yam				Mark David			Mark David
	Warraber					James Billy		
	Poruma						Patrick Bonner	Francis Pearson
	Masig	Hilda Mosby	Paul Lowatta	Gavin Mosby				Gavin Mosby
Eastern	Ugar	Rocky Stephen	Rocky Stephen	Rocky Stephen				William Stephen
	Erub		Kenny Bedford		Les Pitt	Les Pitt		
	Mer		John Tabo					

**NB. Rocky Stephen and Francis Pearson attended the preceding IRG workshop.**

**TSRA employees – Elizabeth McCrudden, Allison Runck and Neville Johnston attended most of the workshop sessions.**



### Recommendations from the Workshop

The following recommendations were made as part of the workshop outcomes:

- Urgent need for an induction workshop for non-indigenous members of PZJA Committees to better understand culture, communities, policies and legislation of relevance to the Torres Strait.
- TSRA to facilitate the development of a formal induction course that will be provided to non-indigenous consultants prior to working in the Torres Strait.
- Potential for further similar workshops focused on each specific PZJA Fishery / Committee.
- A training project be developed for Torres Strait indigenous secondary school students in leadership, fisheries research and management.
- Update the Protected Zone Joint Authority Fisheries Management Paper No. 1 (PZJA FMP No.1, 2008), with particular focus on changes in the legislation and policy framework and the resultant Terms of Reference of each of the Committees.
- In the development of projects of relevance to the Torres Strait, FRDC and other funding bodies should consider inclusion of TS indigenous people as co-investigators or on project Steering Committees.
- Any researchers working on projects in the Torres Strait should ensure that relevant Traditional Owners / Committees are advised and receive approval before their arrival (noting the protocols developed by the IRG on this matter).

Main areas of feedback on the “what are you going to take back” session on the final afternoon:

- Understanding the graphs so that I can understand when is going on in meetings
- Understanding the importance of and the development of the harvest strategy and the connection to a sustainable catch;
- Being exposed to equations;
- Developing knowledge about Terms of Reference and Types of People in meetings;
- Appreciation of the importance of data and logbooks – Information is Power;
- Hearing about the Indigenous Land and Sea Cooperation, and discussing the opportunities for aquaculture in the Torres Strait;
- Understanding about stock and TACs and catch rates and the breeding cycle;
- Rules around meetings and why these are important to understand;
- The value of sharing this information so that the fishermen know potential opportunities;
- The importance of representation and having our opinions organised;
- The importance of the pre-meetings that we do and also the information sharing after the meetings; and,
- Understand the acronyms and the symbols used in the meetings we attend

## Appendix 8 - Staff

Name	Organisation	Project Involvement
Ian Knuckey	Fishwell Consulting	Principle Investigator
Jill Briggs	Affectus	Co-investigator
Matt Woods	Biomedica Productions	Co-investigator
Matt Koopman	Fishwell Consulting	Co-investigator
Beth Gibson	Australian Fisheries Management Authority	Co-investigator